THE OIL WEEKLY

ENGINEERING « NEWS » STATISTICS

EDITORIAL STAFF
WARREN L. BAKER
Editor
J. KENT RIDLEY
Managing Editor

ASSOCIATE EDITORS
L. J. LOGAN — BRAD MILLS
WM. V. GROSS

DISTRICT EDITORS
B. F. LINZ.....Washington
GRADY TRIPLETT, FRANK TAYLOR.....Tulsa
H. H. KING.....Fort Worth
EARL S. POST.....San Antonio
R. W. BYRAM.....Austin
CHAS. LEYENDECKER.....Houston

PUBLISHED BY
THE GULF PUBLISHING COMPANY
HOUSTON, TEXAS

R. L. DUDLEY, *President*
A. L. BURNS, *General Manager*
S. W. ROBINSON, *Editorial Director*

Staff correspondents at all important points.

Member Audit Bureau of Circulation
Member Associated Business Papers, Inc.

BRANCH OFFICES
NEW YORK.....250 Park Ave.
PITTSBURGH.....Vandergrift Bldg.
CHICAGO.....332 S. Michigan Ave.
LOS ANGELES..W. W. Wilson Bldg.
Huntington Park, Calif.
TULSA..... Hunt Bldg.
FORT WORTH.W. T. Waggoner Bldg.
SAN ANTONIO.....Smith Young Tower Bldg.
WASHINGTON.....Albee Bldg.

ADVERTISING STAFF
DICK SWINSKY.....New York
RANDALL E. BROOKS.....New York
C. A. WARDLEY.....Pittsburgh
H. G. FITZPATRICK.....Chicago
J. F. CARTER, JR.....Tulsa
JAY CURTS, JR.....Los Angeles
CHAS. WYATT.....Houston

CIRCULATION DEPARTMENT
J. T. WAGONER.....Manager

SPECIALIZED OIL JOURNALS
Published by
THE GULF PUBLISHING COMPANY

The Oil Man's Calendar

JULY 10–17	American Institute of Mining and Metallurgical Engineers Regional Meeting, San Francisco, Calif.
AUG. 1– 6	The Eastern United States Michigan Oil & Gas Exposition, Mt. Pleasant, Michigan.
SEPT. 4– 8	American Society of Mechanical Engineers, New York.
5	Oil Workers International Union, Hammond, Ind.
11–15	American Chemical Society, Boston, Mass.
13–15	National Petroleum Association, Atlantic City, N. J.
OCT. 4– 6	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Galveston, Texas.
5– 7	Texas Mid-Continent Oil & Gas Association, Houston, Texas.
9–10	American Gas Association Annual Convention, New York.
16–20	National Safety Congress, Atlantic City, N. J.
18–20	Independent Petroleum Association of America, Fort Worth, Texas.
19–20	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Los Angeles.
NOV. 13–17	American Petroleum Institute, 20th Annual Meeting, Stevens Hotel, Chicago.
15–17	American Institute of Chemical Engineers, Providence, R. I.
DEC. 4– 7	American Society of Mechanical Engineers, Philadelphia.

Contents « June 19, 1939

Volume 94, Number 2

The Changing Panorama.....11-12

Feature Section.....13-35

Drilling Activity Shows Usual May-June Briskness..... 13
BY L. J. LOGAN

Consistent Records Vital to Efficient Pumping..... 16
BY FRANK B. TAYLOR

Selective Exclusion of Fluids from Wells, Part 5..... 24
BY PAUL D. TORREY

News Section and News Index..... 41

Men in the Industry's News..... 38

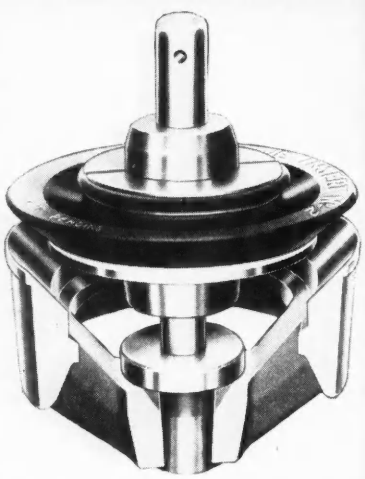
World Developments..... 36

Notes from the Equipment Buyer and User..... 75

Squeaks from the Bull Wheel..... 81

Published every Monday. Single Copies 15 cents (Special Issues 50c). Subscription price: domestic and foreign, $2.00 a year; 2 years $3.00. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879. Subscription restricted to those engaged in the producing and pipe line branches of the oil industry or the manufacturing and distribution of oil field supplies. Advertising rates on application. Copyrighted 1939, by The Gulf Publishing Company.

Insure YOUR PUMPS AGAINST BROKEN RODS *and* WASHOUTS....



MISSION VALVES

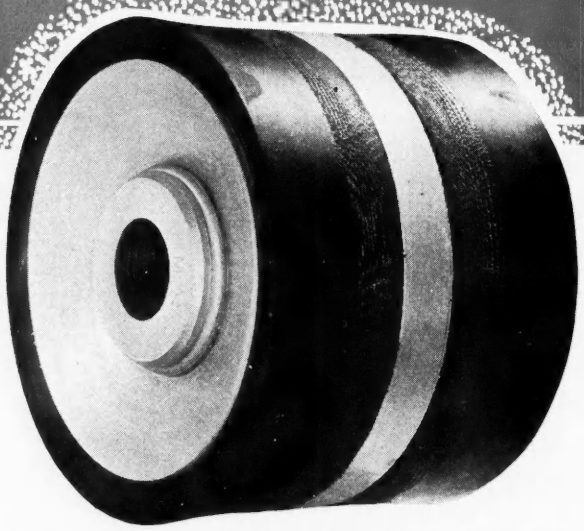
LAST 100% LONGER because of the Mission principle of ***"Pull the bushing and save the seat."***

★

Valve seat is made of drop forged, heat treated alloy steel especially selected for **strength and toughness.**

★

Long wearing rubber valve inserts. The rubbers are **easy to change** due to unique cap and spring.



MISSION PISTONS

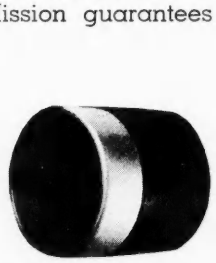
protect your pump from damage due to broken rods, and eliminate washouts between piston and rod because of **forged steel bodies which permit the use of tapered rods . . . the strongest and most fluid-tight known.**

The Mission principle of ***"Change the rubbers and save the piston" cuts piston maintenance costs in half.***

MISSION PISTON RODS

UNCONDITIONAL GUARANTEE: that when Mission File Hard Piston Rods are used with the proper Mission Pistons, they will neither cut out between rods and pistons nor break in service causing damage to pump against which Mission guarantees full coverage.

Mission Self Sealing GLAND PACKINGS



Positive seal is secured from fluid pressure preventing cutting of rod from leaking fluid. Under pressure **only** when the seal is needed, greatly prolonging the life of rod and packing.

USE *all* MISSION

INSURES LOWEST POSSIBLE PUMP UPKEEP COSTS AS PROVEN BY UNSURPASSED RECORDS THROUGHOUT THE WORLD

Sold through Supply Stores everywhere

MISSION POLICY
"IF A PRODUCT DESIGNED BY MISSION IS NOT . . . PROVEN *Superior* MISSION WILL NOT PRODUCE IT"

MISSION MANUFACTURING CO

HUMBLE ROAD, HOUSTON, TEXA
EXPORT OFFICE: 30 ROCKEFELLER PLAZA, NEW YO

• SLIPS • VALVES • PISTONS • PISTON RODS • SWAB

This Week's Panorama

A BETTER situation for all branches of the oil industry has been achieved through the recent upward revisions of tank wagon and retail prices of gasoline throughout most of the country except the Pacific Coast territory.

Refiners and Producers Aided by Better Prices

The refining division has been placed through the better prices in a position where moderate profits can be realized on the products turned out, whereas refining operations had been carried on mainly at a loss for about a year.

At the same time, the increases in gasoline prices probably prevented further weakening of the crude oil markets and additional reductions of crude prices. For some leaders of the industry had asserted not long ago that unless product prices improved, refiners would not be able to continue paying the prevailing prices for crude.

Crude Oil Prices Outside Illinois Believed Safe

Evidence that the crude markets have been relatively weak was furnished June 8, when postings were reduced 10 cents a barrel in Illinois, Indiana, and Kentucky, although those reductions were due to the overproduction of the flush Illinois fields.

It is hoped that Mid-Continent crude prices can be maintained, in the face of the lower postings in the Middle West, although another cut in Illinois and adjacent states probably would precipitate reductions of Mid-Continent prices.

The Mid-Continent crude market is being bolstered this month by the comparatively strict curtailment of production, allowables being generally in line with market demand. Similarly, it is promised that allowables will be strict again in July in the prorated states, which account for nearly 90 percent of all United States production.

Those states in June have allowables that are in the aggregate 126,414 barrels daily or 4.1 percent below market demand. Actual production therefore may be expected to prove economically satisfactory for the month, although some of the states commonly fail to stay quite within their allowables.

Refinery Runs and Output of Gasoline at New Highs

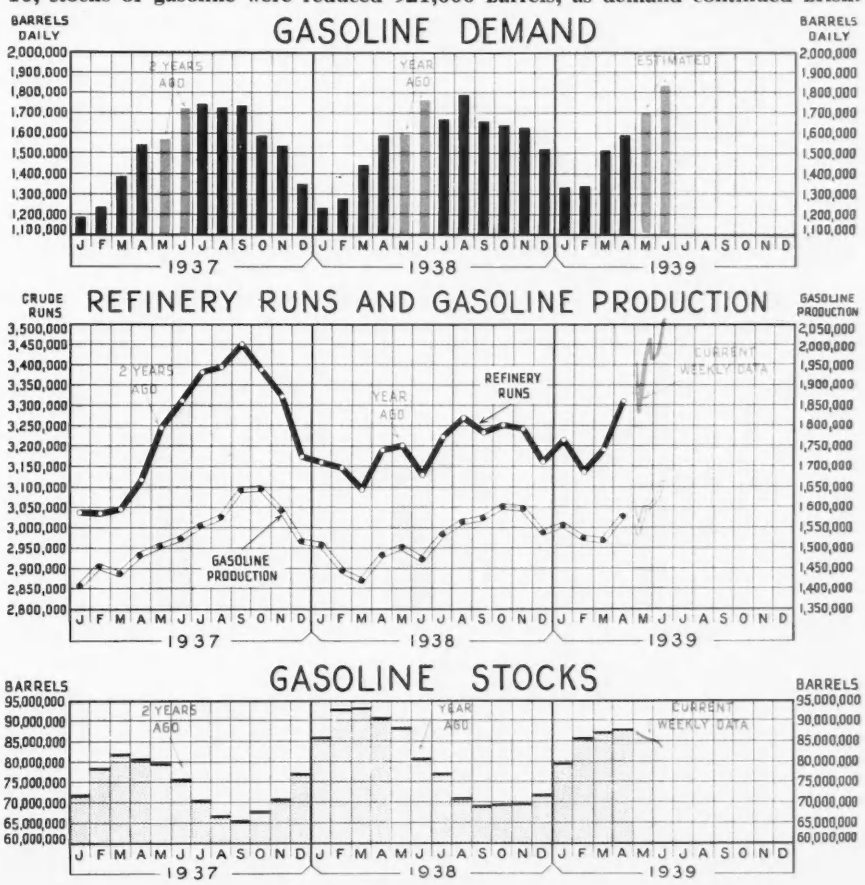
Although strict curtailment of crude oil production normally is conducive to moderate refinery runs, the usual effect is not shown currently. Despite conservative crude production in the week ended June 10, refinery runs were increased sharply, to a new all-time peak. And in consequence of the large throughput of crude at the refineries, gasoline production also rose sharply and established a new record.

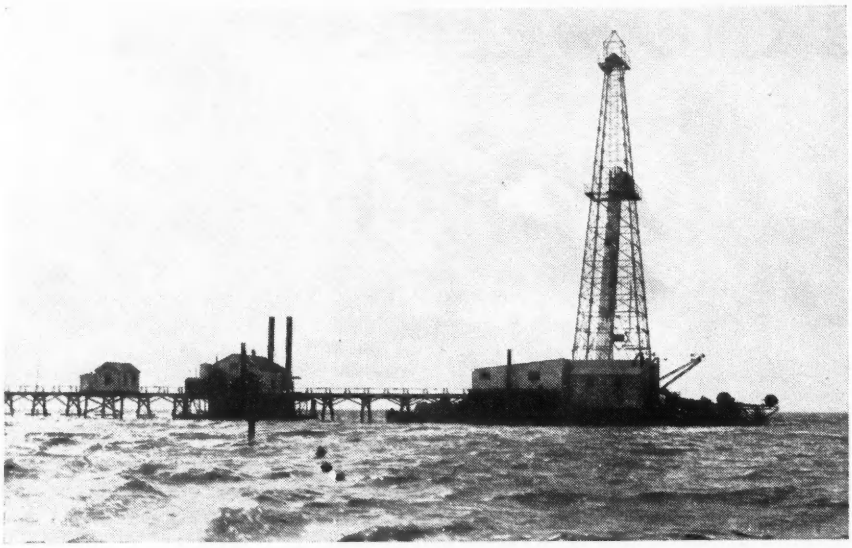
Having averaged 3,376,950 barrels daily for the week, the United States crude oil production was 114,050 barrels under indicated market demand, as estimated by the Bureau of Mines.

At the new peak of 3,510,000 barrels daily, crude runs to stills were

Crude Runs and Gasoline Output at New Peaks

Despite unprecedented refinery runs and gasoline production in week ended June 10, stocks of gasoline were reduced 921,000 barrels, as demand continued brisk.


GASOLINE DEMAND
BARRELS DAILY
2 YEARS AGO
YEAR AGO
ESTIMATED
REFINERY RUNS AND GASOLINE PRODUCTION
CRUDE RUNS
GASOLINE PRODUCTION
REFINERY RUNS
GASOLINE PRODUCTION
CURRENT WEEKLY DATA
GASOLINE STOCKS
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1937
1938
1939



Steel Barge Conveys Rig to Drilling Site and Serves as Base.

SUBMERSIBLE steel barges, such as this one in use near New Orleans, facilitate off-shore drilling.

This barge, bearing derrick and machinery, and drawing about 4 feet of water, was towed to location in 10-foot water, where it was sunk by pumping in water.

Barges of this type carry complete drilling outfits as units.

Boilers shown here were similarly handled on separate barges.

11.2 percent greater than in the corresponding week last year, although June of last year was a month of strict curtailment of both crude production and refinery runs.

Gasoline production amounted to 11,602,000 barrels in the week ended June 10, an average of 1,657,450 barrels daily, or 52,000 barrels a day more than in the previous week.

Despite the large production, however, the markets absorbed all the current output of the plants and also 921,000 barrels from storage, as the stocks came down to 82,716,000 barrels. That inventory was 4 percent smaller than the supply of 86,149,000 barrels held on June 11 last year.

The gasoline inventory situation is materially better than at this time last year. Not only are stocks lower, but demand is running around 5 percent higher. However, the stocks a year ago were seriously burdensome.

Demand for Oil Is Better This Year Than Last Year

So far this year, demand for petroleum products has been fulfilling the more optimistic expectations, although gasoline consumption was somewhat disappointing in April, latest month for which official figures are available.

Figures on actual demand for the various products in April and the first four months of this year, as reported last week by the Bureau of Mines, are presented in an accompanying table.

They show that domestic demand for gasoline was only 1.7 percent larger in April, 1939, than in April, 1938, whereas earlier months of the year had shown an average increase of about 5 percent over a year previously.

Total demand for all United States oils ran 5 percent higher in the first 4 months of 1939 than in the similar period last year.

Total exports were down about 8 percent, as crude oil shipments were 18 percent lower, while exports of refined products were off 9/10 of 1 percent.

Total domestic demand was 7.2 percent larger in the first four months of 1939 than in the corresponding period of 1938, nearly all products having been used more extensively. Increases over last year included those of 4.8 percent for gasoline, 11.4 percent for kerosene, 21.9 percent for gas oil and distillate fuels (heating oils), 9.1 percent for residual fuel oils (industrial fuels), 7.2 percent for lubricants, 40 percent for coke, 28.8 percent for road oil, 5.8 percent for still gas, and 21.4 percent for miscellaneous products.

Oil Demand in First Four Months Materially Better This Year Than Last Year

Figures indicate barrels and are from Bureau of Mines

ITEM	FEBRUARY COMPARISON			MARCH COMPARISON			APRIL COMPARISON			YEARLY COMPARISON		
	Feb., 1938	Feb., 1939	Per-cent Change	March, 1938	March, 1939	Per-cent Change	April, 1938	April, 1939	Per-cent Change	First 4 Mos., 1938	First 4 Mos., 1939	Per-cent Change
Total Demand	94,945,000	100,813,000	+ 6.4	110,237,000	115,170,000	+ 4.4	107,298,000	110,060,000	+ 2.6	415,894,000	436,734,000	+ 5.0
Daily average	3,391,000	3,600,000	+ 6.4	3,566,000	3,715,000	+ 4.4	3,577,000	3,669,000	+ 2.6	3,466,000	3,639,000	+ 5.0
Exports:												
Crude Petroleum	5,328,000	4,810,000	— 9.7	6,121,000	4,966,000	— 18.8	7,553,000	6,222,000	—13.3	24,955,000	20,475,000	—18.0
Refined Products	8,605,000	7,335,000	—14.7	9,204,000	10,849,000	+ 17.9	10,427,000	9,222,000	—11.6	36,224,000	35,900,000	— 0.9
Domestic Demand:												
Motor fuel	31,861,000	34,595,000	+ 8.6	41,259,000	42,520,000	+ 3.2	43,254,000	43,977,000	+ 1.7	151,550,000	158,859,000	+ 4.8
Kerosene	5,017,000	5,901,000	+17.7	5,150,000	5,201,000	+ 0.1	4,333,000	5,042,000	+16.3	19,860,000	22,124,000	+11.4
Gas oil and distillate fuels	11,651,000	13,690,000	+17.1	10,487,000	12,304,000	+ 26.8	7,800,000	10,047,000	+28.9	42,580,000	51,790,000	+21.6
Residual fuel oils	23,627,000	25,139,000	+ 6.4	25,696,000	28,071,000	+ 1.0	22,279,000	24,806,000	+11.8	97,446,000	106,375,000	+ 9.2
Lubricants	1,311,000	1,653,000	+25.9	2,195,000	1,987,000	— 9.5	1,591,000	1,791,000	+12.6	6,568,000	7,040,000	+ 7.2
Wax	82,000	97,000	+18.3	90,000	73,000	— 18.9	101,000	52,000	—48.4	388,000	296,000	—23.6
Coke	416,000	605,000	+45.5	308,000	646,000	—109.5	313,000	394,000	+25.9	1,572,000	2,175,000	+40.0
Asphalt	883,000	833 000	— 5.7	1,444,000	1,269,000	— 12.1	1,654,000	1,840,000	+11.2	5,058,000	5,003,000	— 1.1
Road oil	168,000	180,000	+ 7.1	131,000	228,000	+ 74.0	208,000	267,000	+28.3	658,000	848,000	+28.8
Still gas	4,428,000	4,629,000	+ 5.5	4,901,000	5,376,000	+ 9.7	5,073,000	5,386,000	+ 6.1	19,339,000	20,472,000	+ 5.8
Miscellaneous	132,000	153,000	+15.9	137,000	187,000	+ 36.5	166,000	181,000	+ 9.1	572,000	694,000	+21.4
Losses	1,436,000	1,193,000	—16.8	3,114,000	1,493,000	— 52.2	2,546,000	833,000	—67.3	9,124,000	4,683,000	—48.6
Total domestic demand	81,012,000	88,668,000	+ 9.4	94,912,000	99,355,000	+ 4.7	89,318,000	94,616,000	+ 6.0	354,715,000	380,359,000	+ 7.2
Daily average	2,893,000	3,167,000	+ 9.4	3,062,000	3,205,000	+ 4.7	2,977,000	3,154,000	+ 6.0	2,956,000	3,170,000	+ 7.2

Drilling Activity Shows Usual May-June Briskness

Completions show seasonal increase in May, and number of rigs in use at end of month indicates relatively large number of new wells for June.

By L. J. LOGAN, Associate Editor

DRILLING in the United States showed the usual seasonal increase in May, well completions having risen materially above the daily average rate of April.

And more rigs were in operation on June 1 than on May 1, indicating that June completions probably will approximately equal or exceed those of May, as in most other years.

The increase in drilling in May indicated some recovery of confidence in the oil industry, following an April in which activity failed to show the normal seasonal gain. The interruption of the normal trend in April probably resulted from the disturbed condition of the markets during that month. And conversely, the increase of field work in May apparently was caused in part by the gradual improvement of the markets for gasoline and other refined products and the resultant bolstering of the crude markets, as well as by the favorable weather of spring.

In May there were some fears for the crude price structure, but the Illinois fields were recognized as being in the greatest danger of a price reduction. The Illinois development was not retarded by the threat of lower prices, however, and the Illinois situation did not prove a deterrent to drilling in other areas.

Little Above 1935 Level

Although drilling activity for the country as a whole settled down in April to about the same level as in 1935, it rose somewhat above that level in May. However, it was lower than in May of 1936, 1937, or 1938.

It still appears, therefore, that 1939 completions may closely approximate or only slightly exceed those of 1935, when 22,669 new wells were drilled. If this year's completions should embrace 23,000 wells, they would be about 16 percent fewer than the 27,528 new wells of 1938; and if they should reach 24,000, they would be about 12 percent short of the completions last year.

In the first five months of this year, 10,051 wells were completed in the United States, or 16.5 percent less than the 11,495 finished in the corresponding period last year.

May Results

Well completions in the nation averaged 70.9 daily in May, having increased sharply from the 62.3 daily of April. The completions were, however, 11 percent lower in May, 1939, than in May, 1938. The field work of April also had been 11 percent under last year's level.

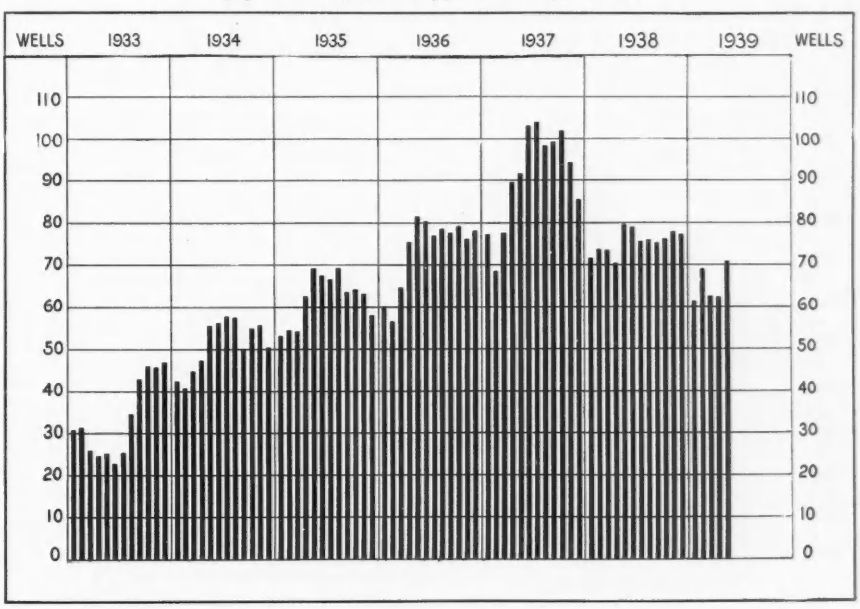
Presented herewith are figures showing the amount of drilling that has occurred in May in each of the six years prior to this year.

May of:	Average Number of Wells Completed Daily
1933	25.1
1934	55.5
1935	69.1
1936	81.6
1937	91.6
1938	79.7
1939	70.9

These figures show that in May, as in April, drilling was following about the same pattern as in 1935.

Although the first five months of this year brought 16.5 percent few-

Average Number of Wells Completed Daily in U. S.
(By Months, January, 1933-May, 1939)



Few More Drilling Rigs in Use Now Than Year Ago

STATE OR DISTRICT	TOTAL RIGS IN OPERATION (Drilling, Rigs Up, Shut-Down) June 1 1939	May 1 1939	June 1 1938	Percent Change from Year Ago	DETAILS OF MAY 1, 1939, ACTIVITY Rigs in Operation Drilling	Rigs Up	Shut-down	Prelim. Activity Derricks	Locations	Total Operations
Arkansas	47	37	46	+ 2.2	35	2	10	4	2	53
Arizona	6	6	...	...	6	...	...	...	1	7
California	290	310	322	— 9.9	190	57	43	45	26	361
Colorado	23	23	11	+109.0	4	1	18	...	1	24
Eastern States	816	853	686	+ 18.9	427	125	254	97	116	1,029
Illinois	391	357	175	+123.1	243	79	69	51	32	474
New Fields	290	170	111	+161.0	206	67	17	41	12	343
Old Fields	101	187	64	+ 57.7	37	12	52	10	20	131
Indiana	48	45	27	+ 77.8	28	4	16	2	9	59
Kentucky	78	73	62	+ 25.8	42	7	29	11	24	113
New York	25	31	50	+ 50.0	14	6	5	3	3	31
Ohio	123	126	140	— 12.1	74	18	31	6	1	130
Pennsylvania	161	158	132	+ 22.0	101	30	30	12	8	181
West Virginia	66	63	100	— 34.0	42	8	16	2	2	70
Kansas	224	205	187	+ 19.8	173	27	24	17	15	256
Louisiana	189	193	237	— 20.3	161	16	12	22	46	257
North Louisiana	66	72	114	— 42.0	47	10	9	13	3	82
South Louisiana	123	121	123	...	114	6	3	9	43	175
Michigan	193	183	169	+ 14.2	136	38	19	11	36	240
Montana	44	49	21	+109.1	8	4	32	...	1	45
Nebraska	1	1	1	...	...	...	1	...	...	1
New Mexico	145	144	112	+ 29.4	117	6	22	6	12	163
Oklahoma	363	391	315	+ 15.2	263	36	64	42	30	435
Southeastern States	17	22	22	— 22.7	7	...	10	2	1	20
Alabama	2	4	3	— 33.3	...	...	2	...	...	2
Florida	5	5	4	+ 25.0	1	...	4	...	1	6
Gerogia	1	2	...	...	1	...	...	...	...	1
Mississippi	9	11	15	— 40.0	5	...	4	2	...	11
Texas	1,179	1,140	1,465	— 19.5	895	91	254	76	360	1,904
East Texas Field	14	11	73	— 80.8	11	1	2	4	4	22
East Texas Border Counties	16	5	34	— 52.7	9	3	4	...	1	17
Rest of East Texas	37	38	51	— 27.5	24	...	13	3	8	48
North Texas	176	162	267	— 34.0	121	17	38	7	64	247
South Texas	288	300	333	— 13.5	227	18	43	14	59	361
Corpus Christi Area	165	172	167	— 1.9	140	12	13	5	42	212
Laredo Area	66	70	81	— 18.5	50	4	12	6	14	86
San Antonio Area	57	58	85	— 33.0	37	2	18	3	3	63
Texas Gulf Coast	151	135	160	— 5.6	138	7	6	23	55	229
Texas Panhandle	97	81	120	— 19.1	76	10	11	2	11	110
West Texas	321	326	340	— 14.2	246	11	64	10	89	420
West Central Texas	79	82	87	— 9.2	43	6	30	...	10	89
Utah	3	1	1	+200.0	2	...	1	...	...	3
Wyoming	79	72	27	+192.5	41	2	36	...	1	80
Total United States	3,695	3,630	3,622	+ 2.1	2,682	404	699	299	552	4,546

er completions in the United States than the corresponding period last year, several districts and states have been more active in 1939 than in 1938.

Illinois continues to play a stellar role, having furnished nearly four times as many new wells in the first five months of this year as in the similar period last year. Completions in the state through May totaled 1441, compared with 372 in the like period last year. Illinois has been accounting for more than one third as many new wells as Texas, and ranks second only to Texas among all the states where wells are drilled. Illinois is furnishing nearly twice as many completions as Oklahoma, about three times as many as either California, Kansas, Louisiana, or Michigan, and six times as many as New Mexico.

In consequence of the Illinois development, drilling is relatively active also in the adjoining states of Indiana and Kentucky. Illinois has had 32.6 percent more completions this year than last year. Kentucky has had 8 percent less.

Outside of Illinois the most noteworthy drilling activity is that in Michigan. That state has had 5[illegible] percent more completions this year

Completions for First Five Months Below Last Year but Production Slightly Larger

STATE OR DISTRICT	*MAY, 1939, COMPLETIONS AND CRUDE OIL PRODUCTION Total Wells	Oil	Gas	Dry	Initial Production	Production for May	COMPLETIONS AND PRODUCTION IN FIRST FIVE MONTHS, 1939 AND 1938 WELLS COMPLETED 1939: 5 Mo.	1938: 5 Mo.	Percent Change	DETAILS OF 1939 DRILLING Oil	Gas	Dry	Initial Production	BARRELS PRODUCTION 1939: 5 Months	1938: 5 Months	Percent Change
Arkansas	20	18	...	2	9,004	1,709,250	87	94	— 7.4	69	...	18	28,263	8,052,100	7,141,950	+12.8
California	108	91	1	16	77,577	19,099,400	429	599	— 28.4	346	2	81	268,268	93,758,900	108,217,100	—13.4
Colorado	2	1	...	1	30	114,850	11	4	+174.5	2	2	7	240	576,850	613,450	— 6.0
Eastern States	692	439	99	157	85,554	†3,066,150	2,982	2,650	+ 12.5	1,901	472	613	344,000	†14,662,900	21,140,600	...
Illinois	324	253	1	70	83,251	6,603,800	1,441	372	+288.0	1,122	15	304	330,848	25,085,750	...	...
Indiana	20	5	3	12	772	...	61	46	+ 32.6	15	14	32	2,527	...	...	...
Kentucky	57	20	6	31	1,050	...	252	274	— 8.0	103	35	114	7,973	...	...	...
New York	‡38	‡35	...	‡3	134	...	‡191	‡326	— 41.5	‡164	18	9	675	...	...	...
Ohio	86	12	46	28	145	...	322	362	— 11.1	56	173	97	714	...	...	...
Pennsylvania	‡124	‡106	12	6	‡159	...	‡504	‡970	— 48.1	408	71	25	565	...	...	...
West Virginia	43	8	31	4	43	...	211	300	— 29.7	33	146	32	698	...	...	...
Kansas	128	96	5	27	123,286	5,229,450	494	752	— 34.3	351	19	124	436,686	23,823,950	25,719,600	— 7.4
Louisiana	109	68	2	39	...	8,306,700	402	422	— 4.7	261	13	128	81,942	38,961,750	38,848,300	+ 0.3
North Louisiana	36	21	1	14	7,941	2,305,050	160	196	— 18.3	109	6	45	37,581	10,944,900	11,937,200	— 8.3
South Louisiana	73	47	1	25	12,302	6,001,650	242	226	+ 7.1	152	7	83	44,361	29,076,650	26,911,100	+ 8.1
Michigan	147	81	6	60	46,684	1,974,450	512	326	+ 57.0	289	15	208	135,469	8,646,100	7,832,800	+10.6
Montana	10	8	2	...	2,216	450,300	43	24	+ 79.1	31	5	7	3,618	2,101,000	2,013,750	+ 4.4
Nebraska	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
New Mexico	62	49	2	11	27,669	3,282,900	239	296	+ 16.0	200	6	33	131,369	12,558,800	15,772,700	—20.2
Oklahoma	243	159	19	65	51,668	14,100,950	831	899	— 7.5	516	56	259	199,226	66,646,450	76,640,750	—13.0
Southeastern States	2	...	...	2	...	...	4	13	— 69.2	1	...	3	...	...	...	...
Alabama	...	...	...	...	...	...	1	1	...	...	...	1	...	...	...	...
Georgia	1	...	...	1	...	...	1	1	...	...	...	1	...	...	...	...
Mississippi	1	...	...	1	...	...	2	9	— 77.6	1	...	1	...	...	...	...
Tennessee	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...
Texas	950	658	32	250	414,221	42,795,650	3,976	5,473	— 27.3	2,881	105	996	2,017,821	204,726,650	196,115,700	+ 4.4
East Texas Field	34	33	...	1	75,308	12,806,300	234	999	— 76.5	231	...	3	651,687	60,187,850	65,016,000	— 7.5
Rest of East Texas	27	11	5	11	14,149	2,979,550	118	228	— 48.3	52	14	52	24,142	14,648,350	14,295,350	+ 2.4
North Texas	182	103	...	79	36,483	2,581,500	662	1,030	— 35.7	400	1	261	164,366	9,763,650	10,751,850	— 9.2
South Texas	280	184	9	87	98,615	7,534,550	1,171	1,156	+ 1.3	804	28	339	347,561	37,165,750	33,784,300	+13.0
Corpus Christi Area	150	113	6	31	80,238	...	549	497	+ 10.5	437	17	95	289,922	...	...	...
Laredo Area	99	55	2	42	16,169	...	444	474	— 6.3	281	9	154	50,291	...	...	...
San Antonio Area	31	16	1	14	2,208	...	178	185	— 3.8	86	2	90	7,348	...	...	...
Texas Gulf Coast	135	101	5	29	30,339	6,951,650	604	617	— 2.1	466	26	118	115,153	33,144,800	29,546,950	+12.2
Texas Panhandle	43	31	11	1	17,499	2,254,300	150	277	— 45.9	116	27	7	48,709	10,121,930	9,940,150	+ 1.8
West Texas	214	182	...	32	139,166	6,720,150	859	1,038	— 17.2	751	2	106	658,710	32,345,200	28,444,850	+11.2
West Central Texas	35	13	2	20	2,662	967,650	178	128	+ 39.1	61	7	110	7,423	3,713,900	4,336,500	—14.4
Wyoming	11	8	...	3	17,907	1,933,650	42	33	+ 27.3	27	1	14	22,668	8,345,900	7,408,450	+12.6
Total United States	2,483	1,676	168	639	876,359	108,703,650	10,051	11,495	— 16.5	6,865	696	2,490	3,669,500	512,515,500	507,465,150	+ 1.0

* May completions cover not the calendar month, but the five weeks or 35 days ended May 27.
‡ Includes water-input wells.
† Does not include Illinois

than last year, 512 wells having been completed in the state up to the end of May, as compared with 326 in the similar period last year. Field work in Michigan has been stimulated by the success in developing new production in the Southwestern part of the state and by the good demand for Michigan crude, as evidenced by the fact crude prices were raised in most fields of the state this spring.

States of the Rocky Mountain region as well as of the Middle West have had more drilling this year than last year, activity having been stimulated by better demand for oil, which has resulted partially from increased refining capacity in the Rocky Mountain and Pacific Northwest areas. Montana has furnished almost twice as many new wells so far this year as it did up to this time last year, completions having totaled 43 as compared with 24. Wyoming's 42 completions in the first five months of this year exceeded the 33 of the similar period last year by 27.3 percent. Colorado has furnished 11 new wells, as against 4 up to this time last year. New Mexico has had 16 percent more drilling in 1939 than in 1938.

The only other districts that have been more active this year than last year have been the Corpus Christi area of South Texas, where completions are 10.5 percent ahead of last year's record, and West Central Texas, which shows a 39.1 percent gain.

Other Areas Less Active

Areas other than those mentioned above furnished fewer new wells in the first five months of 1939 than in the similar period last year.

California's 429 completions so far this year are 28.4 percent short of the 599 recorded up to this time last year. However, the state is proving more active than was generally expected at the beginning of the year.

Although prices of Pennsylvania grade crude oil were increased several times in recent months, drilling activity in the Appalachian region has continued to lag materially behind last year's record. Pennsylvania and New York are furnishing only a little over one half as many new wells this year as they did last year, and West Virginia about three fourths as many, although Ohio drilling is down only about 11 percent.

Kansas has furnished only two thirds as many new wells in 1939 as in 1938, as the state has continued to lose markets to Illinois.

Oklahoma also has lost markets heavily to Illinois, but that state's drilling has held up better than the activity in Kansas.

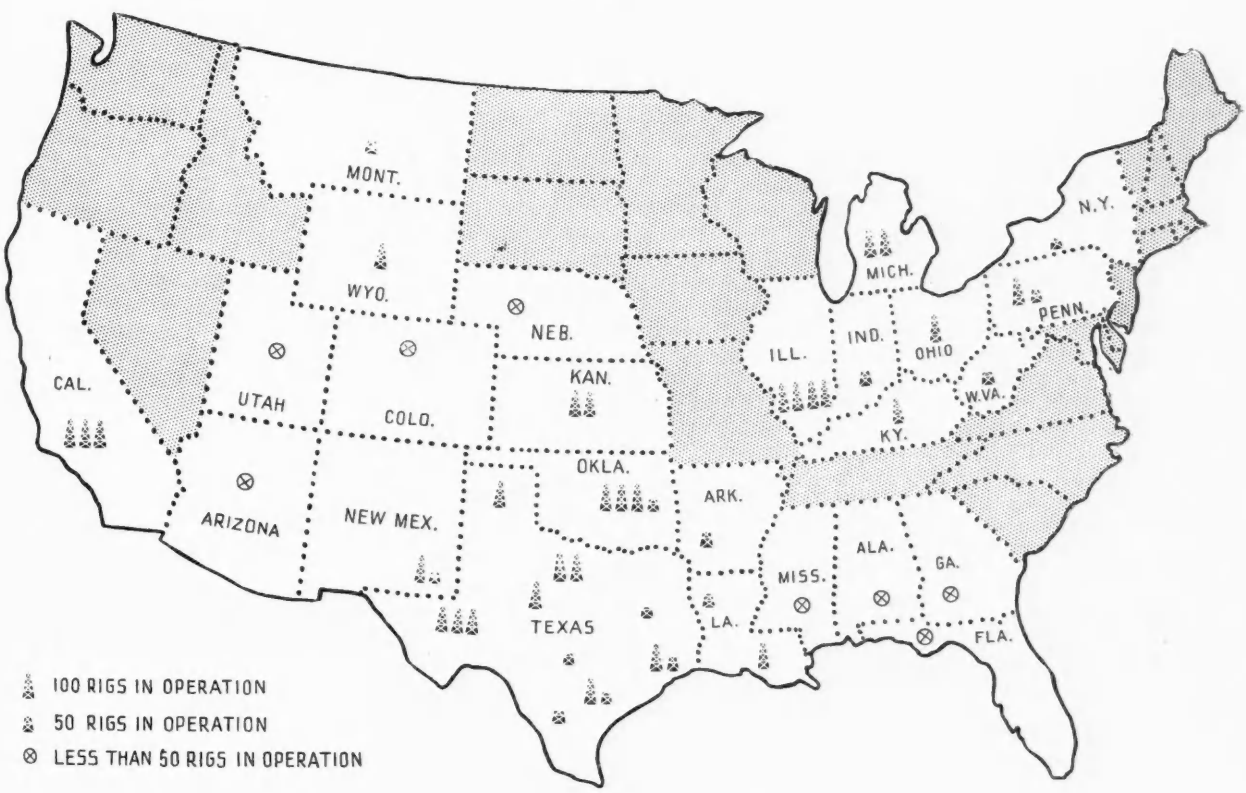
In Louisiana, field work has been 4.7 percent less extensive this year than last year, completions having totaled 402 against 422.

Texas furnished only 3976 completions in the first five months of 1939, or 27.3 percent less than the 5473 in the corresponding period of 1938. Eastern Texas and the Texas Panhandle have had only about one half as many completions this year as last year, and North Texas about two thirds as many. West Texas activity is about 17 percent less extensive this year than last year, and small decreases are shown by the Texas Gulf Coast and the Laredo and San Antonio areas of South Texas.

Drilling Rigs in Use

Drilling rigs in operation in the United States totaled 3695 on June 1, 1939, as indicated in detail in an accompanying table. That was nearly 2 percent more than the 3630 rigs in use one month before and 2.1 percent more than the number in operation on June 1 last year.

Rigs in Operation Register Increase on June 1



Pumping Series Article No. 10

Consistent Records Vital to Efficient Pumping

Properly kept records form means for an unbiased analysis of conditions and troubles that often leads to corrective measures.

By FRANK B. TAYLOR, Staff Writer

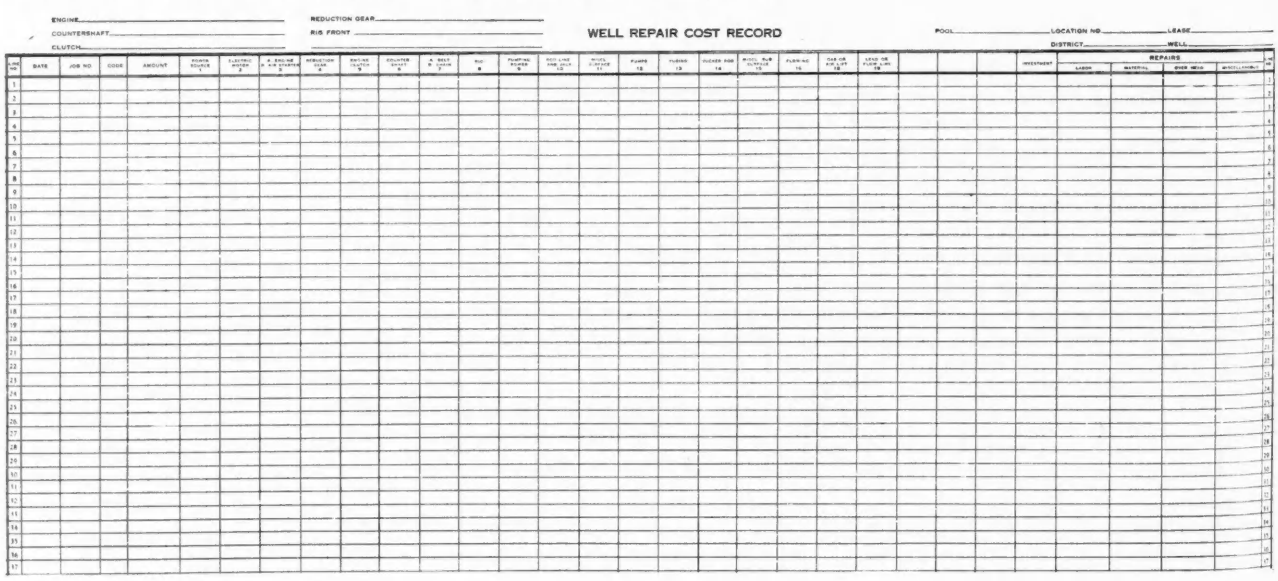
RECORDS are as vital to the efficient lifting of crude as the equipment being used on the well. In most instances, these records are absolutely necessary in a study to lower lifting costs.

Properly kept records evaluate a producing program. They check equipment against service, against barrels of fluid brought to the surface; check field requirements against equipment misapplication; check maintenance costs against time of operations, and above all allow an unbiased study of well performance.

Records must be definite. It is not sufficient for them merely to tell what has taken place in the field, or what changes have been made. They must tell why a change was necessary. A record that only shows history of equipment used in production is satisfactory for inventory, but is worthless to the field man as a guide toward changing of practices to procure improved operating conditions. They should show barrels produced,

The master form, compiled and retained in the general office, is a complete summary of the equipment status of the well or production unit. It includes equipment designations broken down into their two major parts, surface and subsurface. Being a compilation of data it also records the investment and charges against the well in the nature of repairs such as labor, materials, overhead, etc., but eliminates much of the detail recorded on prior forms. Variations in this permanent record may show specific data regarding the well such as depth to pay, top and bottom, casing string set at, liner at, oil/water produced, etc. One means of recording data on this type of form is to enter all items of cost in red ink, those of specification and normal status in black. This allows easy reference. It is from this classified record that recapitulations are made when a special study is desired.

This form is printed on a 27 by 15½ inch ledger style sheet of paper.


ENGINE _____ REDUCTION GEAR _____
COUNTERSHAFT _____ RIG FRONT _____
CLUTCH _____

WELL REPAIR COST RECORD

POOL _____ LOCATION NO. _____ LEASE _____
DISTRICT _____ WELL _____

LINE NO	DATE	JOB NO	CODE	AMOUNT	POWER POLES 1	ELECTRIC MOTOR 2	A. ENG. OR H. P. ENGINE 3	REDUCTION GEAR 4	ENGINE CLUTCH 5	COUNTER SHAFT 6	A. BELT DRIVE 7	RIG 8	PUMPING UNIT 9	POLY LINE AND VALVES 10	WELL HEAD 11	PUMPS 12	TUBING 13	SUCKER ROD 14	WELL PUMP EQUIP. 15	FLOW NO 16	CASING AND LINER 17	LEAD OR TUBING AND PKR 18			INVESTMENT	REPAIRS LABOR	MATERIAL	OVER HEAD	MISCELLANEOUS	LINE NO
1																													1
2																													2
3																													3
4																													4
5																													5
6																													6
7																													7
8																													8
9																													9
10																													10
11																													11
12																													12
13																													13
14																													14
15																													15
16																													16
17																													17
18																													18
19																													19
20																													20
21																													21
22																													22
23																													23
24																													24
25																													25
26																													26
27																													27
28																													28
29																													29
30																													30
31																													31
32																													32
33																													33

breaks and where they occurred, shut downs and many other items. However, they should be brief and specific, for their value is increased concisely.

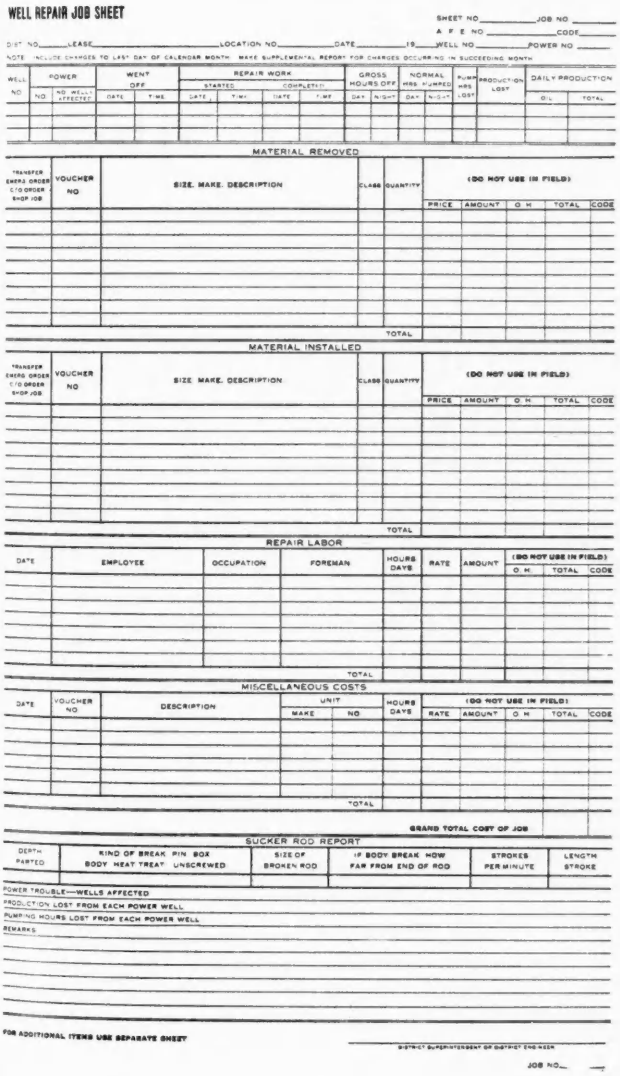
The economic side of keeping records is often brought out in an attempt to show them to be of questionable value when time and costs are considered. Those men in the field, bookkeepers, clerks, production foremen and others are particularly prone to take this attitude. This is not so much because they wish to avoid the work involved in record keeping as it is that by the very nature of their work, they do not realize the advantage of accurate records. Records are admittedly costly. The economy of keeping records is one of relationship.

There is no question but that it is possible to make records too voluminous. Much information can be recorded that is entirely irrelevant. Detail can be added to basic records that only confounds both the field men and the engineer attempting to make an analysis. In such cases the effort is wasted, and in fact, decreases the face value of the record by carrying more data than required for a given purpose. The expense of records must be balanced with the value of the information they give that can result directly in more efficient operation. With this relationship sustained, the record of production equipment is an indispensable tool to all those engaged in regulation of production or application of production equipment.

When records first became an

From the basic field report, and using the facts it carries, a second report is compiled in the district office. In addition to the data compiled on the first report, the district form indicates costs of work done. The cost factors are arrived at differently in different concerns. One method used in the field is to quote the list price of installed equipment, or equipment used in repairs. Another method is to leave the space vacant for the accounting and materials departments. By still another routine, the field may call upon the accounting department for cost figures of equipment, labor costs generally being available. Some secondary type forms in use make no notations as to material costs, leaving this end of the record strictly up to the warehousing and accounting divisions, which base their cost figures on transfers charged to the particular job or lease.

The original of this form was on an 8½ by 14 inch sheet.


WELL REPAIR JOB SHEET

SHEET NO. _____ JOB NO. _____
A F E NO. _____ CODE _____
DIST. NO. _____ LEASE _____ LOCATION NO. _____ DATE _____ 19__ WELL NO. _____ POWER NO. _____
NOTE: INCLUDE CHARGES TO LAST DAY OF CALENDAR MONTH. MAKE SUPPLEMENTAL REPORT FOR CHARGES OCCURRING IN SUCCEEDING MONTH

WELL NO.	POWER NO.	POWER NO. WELLS AFFECTED	WENT OFF DATE	WENT OFF TIME	REPAIR WORK STARTED DATE	REPAIR WORK STARTED TIME	REPAIR WORK COMPLETED DATE	REPAIR WORK COMPLETED TIME	GROSS HOURS OFF DAY	GROSS HOURS OFF NIGHT	NORMAL HRS. PUMPED DAY	NORMAL HRS. PUMPED NIGHT	PUMP HRS. LOST	PRODUCTION LOST	DAILY PRODUCTION OIL	DAILY PRODUCTION TOTAL

MATERIAL REMOVED

TRANSFER EMPL. ORDER C/O ORDER SHOP JOB	VOUCHER NO.	SIZE, MAKE, DESCRIPTION	CLASS	QUANTITY	(DO NOT USE IN FIELD) PRICE	AMOUNT	O. H.	TOTAL	CODE
				TOTAL					

MATERIAL INSTALLED

TRANSFER EMPL. ORDER C/O ORDER SHOP JOB	VOUCHER NO.	SIZE, MAKE, DESCRIPTION	CLASS	QUANTITY	(DO NOT USE IN FIELD) PRICE	AMOUNT	O. H.	TOTAL	CODE
				TOTAL					

REPAIR LABOR

DATE	EMPLOYEE	OCCUPATION	FOREMAN	HOURS DAYS	RATE	AMOUNT	(DO NOT USE IN FIELD) O. H.	TOTAL	CODE
				TOTAL					

MISCELLANEOUS COSTS

DATE	VOUCHER NO.	DESCRIPTION	UNIT MAKE	UNIT NO.	HOURS DAYS	(DO NOT USE IN FIELD) RATE	AMOUNT	O. H.	TOTAL	CODE
				TOTAL						

GRAND TOTAL COST OF JOB

SUCKER ROD REPORT

DEPTH PARTED	KIND OF BREAK PIN BOX BODY HEAT TREAT UNSCREWED	SIZE OF BROKEN ROD	IF BODY BREAK HOW FAR FROM END OF ROD	STROKES PER MINUTE	LENGTH STROKE

POWER TROUBLE—WELLS AFFECTED
PRODUCTION LOST FROM EACH POWER WELL
PUMPING HOURS LOST FROM EACH POWER WELL
REMARKS

FOR ADDITIONAL ITEMS USE SEPARATE SHEET

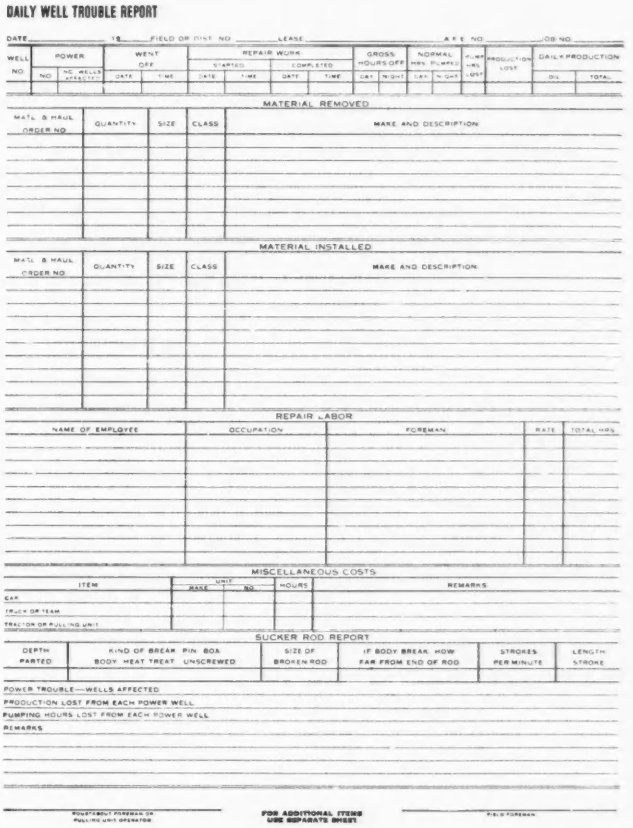
DISTRICT SUPERINTENDENT OR DISTRICT ENGINEER

JOB NO. ___

The basic field report of a producing lease or well is an itemized account of any change from normal in the status of operation or producing equipment. It is customarily made out in the field by the foreman or production superintendent. The one reproduced, more complete as to detail than the majority in use, is a daily report and the fundamental key in the entire series of production reports. It details repair of well equipment or change, materials removed and those installed on the job, designates the particular well and shows production and time lost resulting from the trouble, and indicates labor, material and transportation charges.

Variations of this form of report may greatly reduce the number of items to be reported upon while others may stress the causes making the change or work necessary. Some types of this report are in the nature of daily work sheets, being quite brief in explanation of work done or changes made.

This engraving was reproduced from an 8½ by 11 inch sheet.


DAILY WELL TROUBLE REPORT

DATE _____ 19__ FIELD OR DIST. NO. _____ LEASE _____ A F E NO. _____ JOB NO. _____

WELL NO.	POWER NO.	POWER NO. WELLS AFFECTED	WENT OFF DATE	WENT OFF TIME	REPAIR WORK STARTED DATE	REPAIR WORK STARTED TIME	REPAIR WORK COMPLETED DATE	REPAIR WORK COMPLETED TIME	GROSS HOURS OFF DAY	GROSS HOURS OFF NIGHT	NORMAL HRS. PUMPED DAY	NORMAL HRS. PUMPED NIGHT	PUMP HRS. LOST	PRODUCTION LOST	DAILY PRODUCTION OIL	DAILY PRODUCTION TOTAL

MATERIAL REMOVED

MATL. & HAUL ORDER NO.	QUANTITY	SIZE	CLASS	MAKE AND DESCRIPTION

MATERIAL INSTALLED

MATL. & HAUL ORDER NO.	QUANTITY	SIZE	CLASS	MAKE AND DESCRIPTION

REPAIR LABOR

NAME OF EMPLOYEE	OCCUPATION	FOREMAN	RATE	TOTAL HRS.

MISCELLANEOUS COSTS

ITEM	UNIT MAKE	UNIT NO.	HOURS	REMARKS
CAR				
TRUCK OR TEAM				
TRACTOR OR PULLING UNIT				

SUCKER ROD REPORT

DEPTH PARTED	KIND OF BREAK PIN BOX BODY HEAT TREAT UNSCREWED	SIZE OF BROKEN ROD	IF BODY BREAK HOW FAR FROM END OF ROD	STROKES PER MINUTE	LENGTH STROKE

POWER TROUBLE—WELLS AFFECTED
PRODUCTION LOST FROM EACH POWER WELL
PUMPING HOURS LOST FROM EACH POWER WELL
REMARKS

ROUSTABOUT FOREMAN OR PULLING UNIT OPERATOR

FOR ADDITIONAL ITEMS USE SEPARATE SHEET

FIELD FOREMAN

integral part of the producers' work they were meager summaries of barrels produced. They then were expanded to include service records of wells and equipment. With this expansion they expressed less than ever the activity of the man operating the wells and production equipment. To offset this, many companies send men familiar with the record setup into the field to explain the objects of each form, their relationship to each other and their purpose as a whole. This saved much time and wasted effort, and more important, gave the man making the compilation an interest in his work by showing him the application of records. Conferring on reports and records in this personal manner is desirable whenever a new routine is being established or where forms are being added or changed.

An important angle of recorded information is in providing a basis for producing routine and production equipment on new wells. Records of wells in the same or adjacent areas, or in fields where similar conditions are encountered, serve as a ready and reliable guide. In such instances both the field man and the engineer, and not infrequently the man supplying the equipment, find excellent reference in past performance of materials and of well routine in production cards. These are digested and compared with conditions prevailing at the recently completed well. Any differences can be accounted for and routine and equipment varied accordingly. Mistakes made in prior installations or means of producing have been made apparent in the card or record files and these can be avoided, thus establishing an immediate saving. This saving is one of the benefits of adequate records, and one that does not show on the income side of the production ledger.

A directed, connected, understandable program of records is necessary to realize to the full the

The well inventory report originates in the field upon completion of installation of pumping or other artificial lifting equipment. This installation may be the first made, or it may be a change from a flowing status to one of lift. In either case, each item of equipment that is used at the well is separately listed and charged against the lease. For field purposes no attempt is made to make the charges in dollars and cents, this being the function of the accounting department from the field inventory. The latter specifies the size, make, condition, whether used, reconditioned or new; serial numbers, etc., of each piece of equipment used. The customary form is divided into to sections, one detailing surface, the other subsurface equipment.

The form shown here was reduced from an 8½ by 14 inch sheet.

WELL INVENTORY REPORT

DISTRICT_____ LEASE_____ WELL NO.____ DATE PUT ON PUMP_____

A. Subsurface Equipment

1 Tubing-Make_____ Cond._____ Size & Amount_____

2. Rods-Make_____ Cond._____ Size & Amount_____

3. Pump-Make_____ Type_____ Size_____ Cond._____
Size, Make & Cond. (TV)_____ Reg. Steel_____
(a) Size Cups_____ Balls and Seats (SV)_____ or Stainless_____
(b) Make, Size & Fit of Plunger_____Depth Pump Set_____

4. Mud Anchor-Size & Length_____ Gas Anchor-Size-Length_____
Perforation-Size & Length_____Depth Set_____

5. Tubing Catcher-Make & Size_____No in well_____Where Set_____
(a) Is catcher anchored?_____At what depth?_____

6 Polish Rod-Make_____Size & Length_____Cond._____

B. Surface Equipment

1 Derrick-Make_____Size_____Wood or Steel_____Cond._____
(a) Crown Block-Make_____No Beams_____No. Sheaves_____Size_____
(b) Rod Hanger-Make_____Portable or Stationary_____

2 Walking Beam-Make_____Type_____Cond _____

3 Pitman-Make_____Wood or Steel_____Cond._____

4 Samson Post-Make_____Wood or Steel_____Cond._____

5. Jack Posts-Make_____Wood or Steel_____Cond._____

6 Crank-Make_____No. Holes_____Length Stroke_____

7 Bandwheel-Make_____Size & Width_____Cond._____

8. Bandwheel Belt-Make_____Length, Size & Ply_____Cond._____

9 Countershaft Belt-Make_____Length, Size & Ply_____Cond._____

10 Counterbalance-Make_____Eff. Wt._____

11 Countershaft-Make_____ Driving Pulley Size & Width_____
Driven Pulley - Size & Width_____

12 Engine-Make_____H. P._____Cycle_____Cond._____
(a) Ignitor_____Type_____Serial No._____
(b) Stroke_____Bore_____

13 Clutch-Make_____Size_____Cond _____

14 Engine & Belt House-Wood or Galvanized Iron_____Cond._____

15 Beam Hanger-Make_____Cond._____

16. Casinghead-Make_____Size_____Cond._____

17. Bullwheels-Make_____Size_____Cond._____

18. Stuffing Box-Make_____Size_____Cond._____

19. Engine Circulating Tank-Kind_____Size_____Cond._____

20. Jack-Make_____Size_____Cond._____Frame_____

21. Rod Line-Make Rods_____Size Rods_____Length of Line_____Cond._____

C. General Remarks (Any equipment not mentioned above or any remarks about general conditions):_____

Pumpt Wells_____SIGNED_____

The well expense summary is an equipment inventory, but substituting actual dollar and cents valuation for equipment specifications. This total cost plus expense chargeable against the well in labor items is compared with the well production in dollars. From this comparison, based upon estimated production, an estimated profit or loss is arrived at to indicate the economic status of the producer.

The original report was on a standard 8½ x 11 inch sheet of paper.

SUMMARY OF WELL EXPENSE

DISTRICT_____ DATE_____

LEASE_____ Top Pay_____ Bottom Pay____
Total Depth_____

WELL NO._____ _____Casing Set_____

EMULSION REPORT

____B.S.,____Water, Length of Stroke____,Strokes Per Minute____,Hrs. Pumped___

ESTIMATED COST OF MATERIAL

Cups	$_____	Counterbalance	$_____
Balls and Seats	_____	Belt	_____
Pump	_____	Motor or Engine	_____
Tubing	_____	Clutch	_____
Sucker Rods	_____	Rig or Rig Front	_____
Rod Line	_____	Miscellaneous	_____

Total Estimated Cost of Material $_____

ESTIMATED COST OF LABOR

_____Man Hours at_____per hour $_____
_____Tractor Hours at_____per hour _____
Misc. Labor_____ _____

Total Estimated Cost of Labor $_____

ESTIMATED PRODUCTION

_____Barrels Water Daily _____Barrels Oil Daily
Estimated Production for____days at_____Bbls. per day _____Bbls.
Less: - Estimated Lost Production _____"

Less: - Royalty _____"
Estimated Net Production _____ _____"

SUMMARY

Value of_____Bbls.,____gravity, oil @ $_____per Bbl. $_____
Estimated Cost of Material $_____
Estimated Cost of Labor _____
Total Expense $_____

Estimated Profit / Loss _____ $_____

REMARKS

advantage of this work. Materials, operation and performance must be coordinated. Records are a complete accounting of human factors, operating routine, material service; not only a study of equipment.

Although the record setups vary greatly in different fields and as used by the majority of companies, there are certain fundamentals common to production. The brief, stable form showing actual production in barrels per lease, broken down into barrels per well and into water vs. crude, are generally familiar. These form the basis of lease and well operation, proration and economy practices.

A number of records are only indirectly related to lifting of crude. These are supervision breakdowns, disposal operation, safety records, and similar data. These are important in their place, but having no actual connection with production measures are not considered in this article.

Record data originate in the field with an interruption in routine or a change in practice or equipment. The first record of a producing well, whether flowing, pumping or under other means of artificial lift, pictures the primary installation made to most practically meet the conditions of the specific well. This record is in the form of an inventory of all equipment installed and details the cost of the establishment of the well as a producer. Each part, unit or piece is listed, together with its type, make, whether new or on a transfer from another farm, and its condition if previously used. This record is a reference in the field office and an inventory and cost breakdown in either the district or general office or both.

The well inventory report frequently is accompanied by a report of the work done, showing the reason for the work such as a change in well status from flowing to artificial lift. Also included in such additional reports may be hours during which no production was obtained and man-hours required for the change. Each of these reports carries the notation as to well, farm, district and location and are usually signed by the foreman and checked by the district engineer.

Once the well is equipped to operate satisfactorily, every case of trouble is corrected as it occurs. Although the practice is not being applied by every firm, it is customary to make repairs or correct the trouble immediately it is manifest. This is in contrast to older practices when it was necessary to obtain a work order and job number for every field repair or change. Some firms have established a policy of setting up inclusive orders for the general types of field work, with individual designations that are broad enough to cover all ordinary field activity.

The primary reports of an installation may be broken down into two natural divisions, one showing surface and the other subsurface equipment. The former would include derrick, counter-balance, bandwheel, belts, engine, casinghead, ignition equipment, gearing, pitman, posts, air starting mechanism, filters, compressors, tanks, etc.; and all applied surface equipment. Subsurface equipment would include casing, liners, anchors, tubing, sucker rods, polish rod, and pump. Supplemental to the latter would be notations as to the depth of the producing zones, sacks of cement used on casing, initial barrels production, both of water and crude, first pumping gauge in

Sucker rod service records are especially important. Here is one type being used. In its original state it was on paper 8½ x 11 inches, with one form on each side of the sheet.

SERVICE RECORD——DATA SHEET

COMPANY_____

LOCATION (POOL)_____

LEASE AND WELL NO._____

Summary of This Service Record
Date installed
Days to 1st failure
Total failures
Total days service
Days per break

1. ROD & WELL DATA

Type of Rods_____ Date Installed_____
Heat No. and Date of Jones Rods_____ Type of Coupling_____
No. of feet in string ⅝"_____ ¾"_____ ⅞"_____ 1"_____
Depth of Working Barrel_____ Fluid level_____ Dia. of Tub_____
Is hole considered straight?_____ Any wear on rods or couplings?_____
Make of Pump_____ Type of Working Barrel_____
Dia. of Plunger_____ Dia. of lead line_____
Has well been weighed?_____ Load_____

2. PUMPING CONDITIONS

Av. Daily Prod. Bbls., Oil_____ Water_____ Does gas accompany Oil?_____ Length of gas anchor_____
Sp. Grav. Oil_____ Length of pumping stroke_____ Strokes per min._____
Does well pump off?_____ Do rods or other equipment pit?_____
Is well making Hydrogen Sulphide?_____ How determined?_____
Is tubing anchored and where?_____
Average days operation per month_____ Hours per day_____

ATTACH LEAD ACETATE TEST PAPER

Note any change in well conditions at time of new installation?_____

3. PUMPING EQUIPMENT

Type of rig_____ Maximum length of stroke_____
Is well properly counter balanced?_____ Type_____

4. SERVICE RECORD—PREVIOUS RODS

Make and type of rods				
No. of feet of rods ⅝"				
¾"				
⅞"				
1"				
Date installed				
Days to 1st failure				
Total failures				
Total days service				
Days per break				

NOTE Complete record of breaks of at least one previous string should be given on back of this form if available.

SERVICE RECORD DATA

CURRENT INSTALLATION Date Installed_____

PREVIOUS INSTALLATION Date Installed_____

BROKE AT	DAY	DATE	TYPE	DEPTH	SIZE OF HOLE	DAY	DATE	TYPE	DEPTH	SIZE OF HOLE	REMARKS
20											
19											
18											
17											
16											
15											
14											
13											
12											
11											
10											
9											
8											
7											
6											
5											
4											
3											
2											
1											

EQUIPMENT AND OPERATING REPORT

DISTRICT_____ DATE_____
LEASE_____ WELL NO._____
CAUSE OF TROUBLE [State Why Well or Other Equipment Was Shut Down]_____

CONDITIONS FOUND: [State Clearly in Detail, Size, Make and Condition of Material or Equipment Taken Out of Service]_____

MATERIAL USED: [State Size, Quantity and Make. Also Whether New or Second Hand]

SOURCE OF MATERIAL_____
GENERAL REMARKS: [Any Additional Information or Suggestion for Helping Conditions]

PUMP SET AT_____ PERFORATION SET AT_____ TOTAL DEPTH_____
LENGTH MUD ANCHOR_____ LENGTH GAS ANCHOR_____
WAITING HRS._____ PUMPING HRS._____ PUMPING HRS. LOST_____
TRACTOR NO._____ USED_____ HOURS_____
NO. OF MEN USED ON JOB_____ NO. OF HRS TO COMP. JOB_____
NORMAL OIL PROD._____ WATER PROD._____ ESTM. LOST PROD._____
NO. OF STROKES PER MINUTE_____ LENGTH OF STROKE_____

Reported by_____

Checked by_____

Routine equipment and operating reports may be simplified to carry no more than is needed to give a picture of operating conditions. In this brief form, the cause of trouble is expressed, the conditions resulting from the trouble, and materials used to recondition the well. It may carry space for recommendation for elimination of the problem. The report is well adapted as an informative inventory of operation problems without attempting to detail the major items of repair and accounting.

The report shown here is printed on a 5½ x 8 inch sheet, perforated at the top so it may be torn from the book.

hours/barrels. To keep the additional notations up to date a majority of firms retest producing wells periodically, in intervals of six months or less, not only to fix possible proration but also so that they can more accurately estimate the true capacity of the well to produce.

Also supplemental to the well inventory record form are records of individual pieces of equipment. These may be on an engine, on gearing, polish rods, belts or sucker rods. Setting this type of item up individually gives a second check on service, and these records are usually referred to as service cards. In the case of sucker rod records, the service record is an invaluable aid in a study of failures to determine the exact cause of the trouble. The practice of filing a card of each break or replacement is well worth the time. Some firms, in addition to this, graph out the frequency of breaks and the depth of failure, as illustrated.

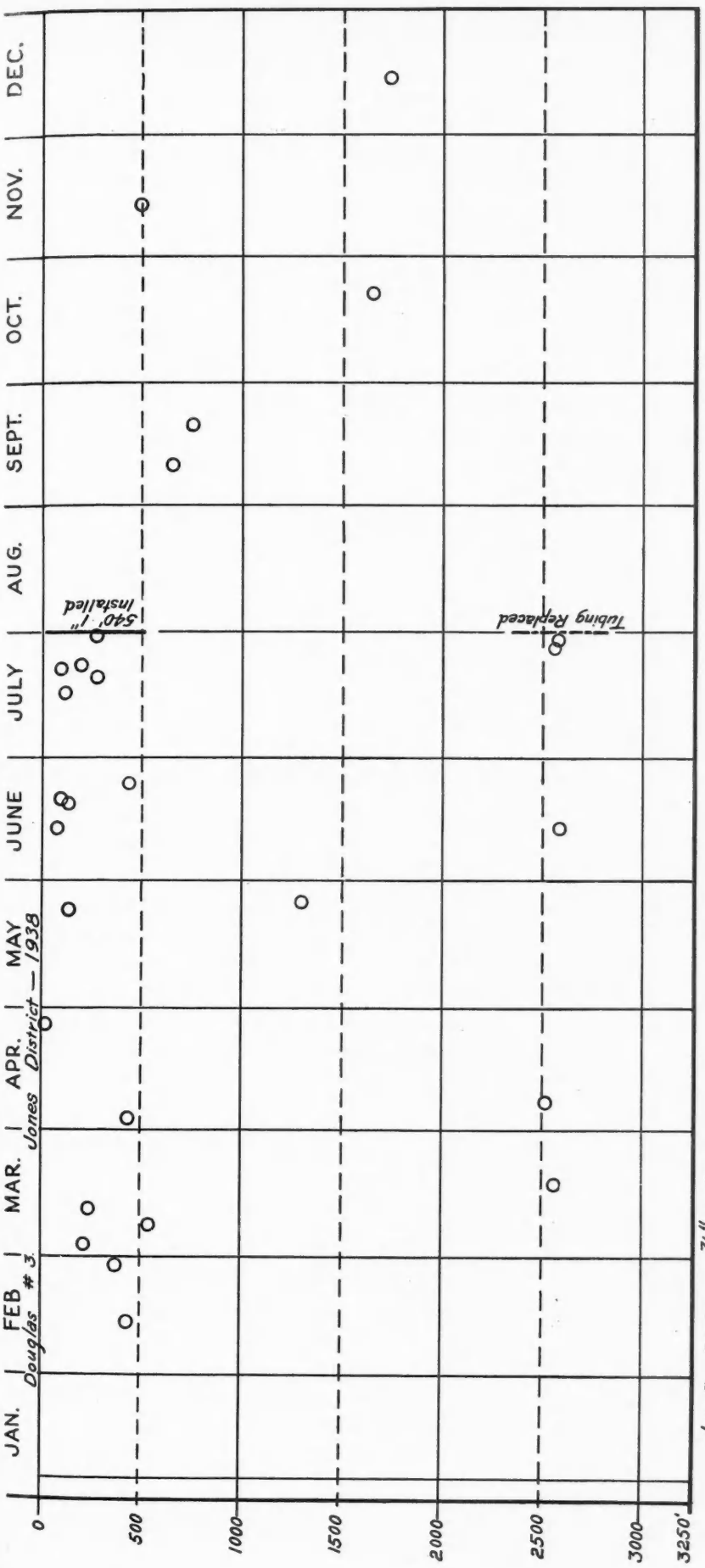
From the original field report a second is made out in detail that

Shop reports are often a by-product of operating a producing lease. These assume the role of repair cost records and detail the nature of repairs to reconditioned equipment. In general, their use is confined to company operated shops handling material for an entire division. It is important to correctly note the removal location and the reinstallation spot to make this type of record of maximum value.

The accompanying record is merely mimeographed on an 8½ x 14 inch sheet, although it may also be printed if desired.

Pump No._____ Size and Make_____ No. 1

Date Installed	Removed	Lease	Well No.	Labor	PUMP REPAIR COST: Material	Shop Overhead	Miscl.	TOTAL	Shop Job No.	Repair Material



The graph shows the advantage of using this means of recording rod breaks. In addition to noting each break, shown by circles, the visual presentation is superior to an index file for it presents facts regarding the operation and service of the string that are not immediately apparent on filed cards. The well graphed in the illustration was put to pumping with a string of 7/8 inch rods to 3250 feet. The first break was on February 13 at 440 feet, the second February 27 at 380 feet, etc. Analyzing the graphic presentation it soon became evident that heavier rods should be run into the first 500 feet of hole. This was indicated by the frequency of breaks being confined to this section of the hole. The change was made August 1, with one-inch rods replacing the first 500 feet of 7/8 inch. At the same time examination of the graph showed that five breaks had taken place very close to the 2560-foot marker. Pulling the entire string gave the reason, for it was seen that rod couplings were severely worn in this part of the string. This indicated a crooked hole or bent tubing, and a survey had previously shown the hole to be reasonably vertical. Investigation proved a joint of tubing to be bent, and this was replaced at the same time.

Regular graph paper is used in plotting these records.

is generally broken down into material removed, installed, repair labor and miscellaneous costs. Upon this the transfers are noted. Also, a number of concerns use this form, which is in duplicate for district and general office, to show dollars and cents costs. The latter items may be supplied by the accounting department from their records.

From the secondary form, a duplicate of which goes to the production office, a permanent record is taken. This is usually a ledger form, itemizing the well equipment and changes made. This record is the trouble history of the well and forms the basis of comparison. Although this record varies with the companies making use of this general system, its fundamentals are only slightly changed in the different setups.

Certain special records are customarily a part of the program. These may include warehousing reports of reconditioned pumping equipment, repair cards on pumps sent to either the manufacturer or a company owned repair shop. Records of pieces of equipment that have shown defects or unexplainable failures and records of

Certain pieces of equipment in common use on the pumping well may be recorded individually. Such forms are in the nature of service records and are usually card indexed. Under this general classification are belts, both flat and "V," powers, rods and other items the producer considers as deserving special treatment.

The accompanying forms are printed on card board paper, 8 x 5 inches in size.

SUCKER ROD RECORD

LEASE_____ WELL NO._____ TOTAL DEPTH_____ SIZE TUBING_____

Date in or Out	Date of Part	Cond.	Make	Size	Pin Size	Amt.	Depth Rod Run	Type of Break	Depth Parted	Make of Pt. Rod	Avg. Days Run	Weight	SPM	Fluid	
														Oil	Water

FLAT BELT SERVICE RECORD

LEASE_____ WELL NO._____ DISTRICT_____

TYPE UNIT_____ PUMPS WELLS_____

DESCRIPTION	Cond.	SERIAL NO.	WIDTH	Ply	Length	ORDER NO.	DATE Installed	DATE Removed	TOTAL DAYS RUN	REMARKS

"V" BELT SERVICE RECORD

LEASE_____ WELL NO._____ DISTRICT_____

TYPE UNIT_____ PUMPS WELLS_____

DESCRIPTION	COND.	NO. BELTS	SERIAL NO.	ENGINE R. P. M.	REMARKS

pieces of equipment that have been sent to engineers for study. In this connection, whether a pump part, sucker rod, or piece of chain is to be examined, the most important single factor is to immediately tag the piece for identification purposes so that its accurate history can be obtained. Many times a rod sample has been obtained under one designation, while investigation proved the sample to be a different rod entirely. A pump repair man in checking records found that the unit supposedly giving trouble was still operating in a well eighteen miles distant from that to which he was called. Accuracy, and agreement between field and office records is vital to efficient operation.

A special form some firms make use of applies strictly to tests of individual wells. It may be that field reports indicate a troublemaking well on an operating lease, or that the lease itself is not producing in a manner to be expected. This calls for an investigation into the cause of the trouble, if any, and particular forms showing the results of such tests are frequently compiled. Also, some firms regularly make actual production tests of their wells, whether required for proration or not, to find the actual capacity of the well to produce and from this to have factual knowledge for comparison with field and lease reports. From this type of report and investigation, decline curves can be established and compared with those based upon pipe line takes. Tests of this character are made periodically, as conditions warrant.

Comprehensive records frequently indicate equipment satisfactory for one purpose is not applicable in another area or field where conditions are different. Also, they may show that no equipment is entirely satisfactory in its application to a condition and that there is need for a new design or development in equipment. In any case where there is consistent trouble they indicate a condition that requires study and correction. Materials can result in trouble, conditions can produce the trouble; the records tell the story when the case history of the well is analyzed.

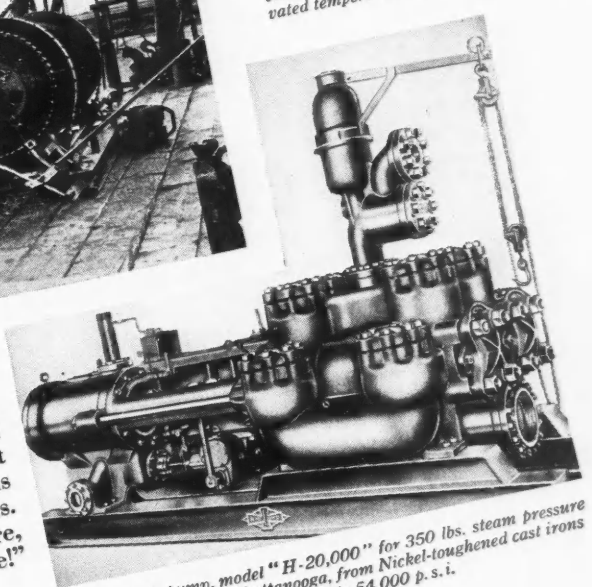
Next week: Light Foundations Frequent Source of Trouble.

Oil field advantages FORETOLD *by physical tests*

CAST NICKEL IRONS

Reed Roller Bit Co., Houston, uses Nickel-chromium-molybdenum cast iron in its "Type 101" rotary engine. Tensile strengths show 55,000 p. s. i. Nickel inhibits growth at superheat temperatures.

Mechanical testing is important at Wichita Falls Foundry & Machine Co. Stocks are maintained of oil field equipment, particularly Diesel pistons, liners, heads and rings of Nickel cast iron. Nickel alloyed irons provide greater toughness and strength at elevated temperatures.



Duplex slush pump, model "H-20,000" for 350 lbs. steam pressure built by Wheland Co., Chattanooga, from Nickel-toughened cast irons with minimum tensile strengths up to 54,000 p. s. i.

Foretelling the log sheets of every drilling crew is another sheaf of reports—records of physical tests made upon all material to be used in the field. In testing labs, as on derrick floors, oil men agree that Nickel alloyed cast irons do more work at lower cost per foot and per year.

Tensile strength...hardness...wear resistance...strength at elevated temperatures...resistance to growth...dense-grained structure to maintain pressure-tightness...toughness to resist shock stress. The heightened physical properties of cast irons alloyed with Nickel are indicated by scientific testing methods. Your horny handed driller sums it all up when he says, "Sure, Nickel Iron's O. K.—never gives us no trouble!"

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.

Selective Exclusion of Fluids from Wells

By PAUL D. TORREY,
The Sloan and Zook Co., Houston, Texas

PART V

VIII. Squeeze Cementing To Shut Off Water

The preceding discussion covers the application of squeeze cementing in reducing gas/oil ratios. Attention now is given to another important problem that constantly is confronting a petroleum producer—the exclusion of water from wells. To begin with it should be emphasized again that there are two general methods which commonly are used for this purpose. These are squeeze cementing, where the cement is forced into or against the offending formation under artificial pressure; and plug-pack methods or various types, where the cement is not subjected to any pressure other than the weight of the column of fluid above it. It is proposed to devote our consideration to the former topic first, and to follow this discussion with a study of the latter method in a succeeding section.

It has seemed desirable to follow the same general line of approach to the study of water exclusion by the application of squeeze cementing that was followed in the preceding section devoted to the reduction of gas/oil ratios. Typical case histories of well completions or work-over jobs will be described from representative fields, to which will be added such comments as may be helpful in presenting any particular facts of interest in connection with the procedure employed, the conditions that existed prior to the remedial work, and the results that have been obtained.

Amelia Field, Jefferson County, Texas

Water exclusion has been a problem in the Amelia field, as well as the reduction of high gas/oil ratios. The thin oil- and gas-pay section is overlaid by a salt-water-bearing sand which is located only about 15 feet above the top of the oil pay. Great care, therefore, must be exercised properly to cement the casing before the wells are completed; but in quite a few instances, notwithstanding all of the reasonable precautions that may be taken, the water shut-off from above is not effective, and squeeze cementing must be resorted to in order to make a good completion. An example of the application of squeeze cementing for the exclusion of water is given in the record of the following well.

The well was drilled to a total depth of 6785 feet and 5½-inch casing was set and cemented at 6782 feet, leaving 3 feet of oil sand exposed in the open hole. The salt-water sand above the oil pay was found at from 6762 to 6767 feet, and the oil sand was from 6782 to 6785 feet. Upon completion, the well made water alone and no oil. A cement retainer was set at 6768 feet as a bridge plug, and the casing perforated with 6 shots between 6764 and 6767 feet. A retainer then was run in on the tubing and set at 6762 feet, right at the top of the water-bearing sand. Ten barrels of water were pumped through the perforations to break down the formation, with an initial pressure of 2100 pounds per square inch and a final pressure of 2100 pounds per square inch. Seventy-five sacks of cement, having a slurry weight of 15 pounds per gallon, were pumped down the tubing following the water, of which it is estimated that 35 sacks were squeezed through the perforations with a maximum squeeze pressure of 3500 pounds per square inch. The cement remaining in the tubing was washed out through the circulation joint; and after the cement had set for 48 hours, the retainer and cement were drilled out, and the well completed with a production of 643 barrels of oil per day, a gas/oil ratio of 350 to 1, and no water. The method employed in this well is illustrated in Figure 8.

Seventy-five percent of the squeeze-cement jobs for the exclusion of water in the Amelia field have been entirely successful. The remaining 25 percent have been reasonably successful in reducing water production from 75 to 100 percent down to 10 or 12 percent.

Conroe Field, Montgomery County, Texas

Squeeze cementing for the exclusion of water has been reasonably successful in the Conroe field. Most of the present troubles resulting from water occur in wells located in the lower structural parts of the field that originally were drilled too deep, or in edge wells that have suffered from water encroachment due to the withdrawal of oil from the sand. Practically all of the squeeze-cement jobs have been conducted in open hole, with a cement retainer used in approximately 50 percent of the jobs. As an example of the results that have been obtained, the re-completion record of the following well is given.

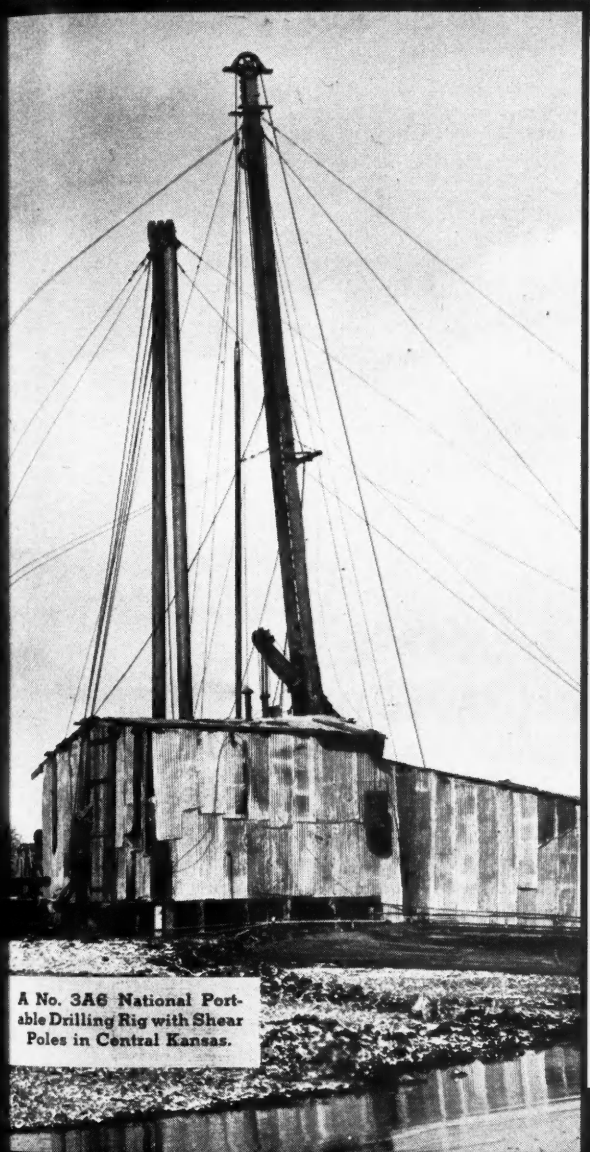
This well was drilled to a total depth of 5135 feet, and 5047 feet of 7-inch casing was set and cemented at the top of the sand, which was found at from 5047 to 5135 feet. At the time the well was re-worked, it was making from 35 to 50 percent water. A cement retainer was set at 5027 feet, and water pumped into the sand with an initial breakdown pressure of 1700 pounds per square inch. Then 243 sacks of slow-set cement, having a slurry weight of 14 pounds per gallon were pumped through the retainer and forced against the formation. The cement was allowed to set for 36 hours; and after the retainer and cement had been drilled out, the well was re-completed, making only 7 percent water, with a gas/oil ratio of 425 to 1.

One of the interesting features in connection with squeeze-cement jobs in the Conroe field is the large quantities of cement that are required; 100 to 250 sacks are not at all uncommon to effect the desired maximum squeeze pressure. This may be due to the fact that

Part 1 of this paper, which was presented at the Mid-Year Meeting of the American Petroleum Institute at New Orleans, appeared on page 26 of the issue of May 22. Part 2 appeared on page 36 of May 29 issue; Part 3 on page 40 of June 5 issue; Part 4 was on page 17 of June 12 issue. Part 6 will appear next week.

NATIONAL *Portable* DRILLING RIGS

FOR MEDIUM AND HEAVY CABLE TOOL DRILLING



A No. 3A6 National Portable Drilling Rig with Shear Poles in Central Kansas.

FOR cable tool areas where moving is a problem and heavier tools are required, National Portable Drilling Rigs are especially economical. Made of convenient assemblies they are quickly trucked to the location and rigged up. Solid foundations add to stability and strength. For heavy strings of casing shear poles may be furnished. The National Cushioned Mast Top makes wire line spudding practical. Attachments for rotary drive are available.

NATIONAL PORTABLE DRILLING RIGS ARE MADE IN THREE SIZES

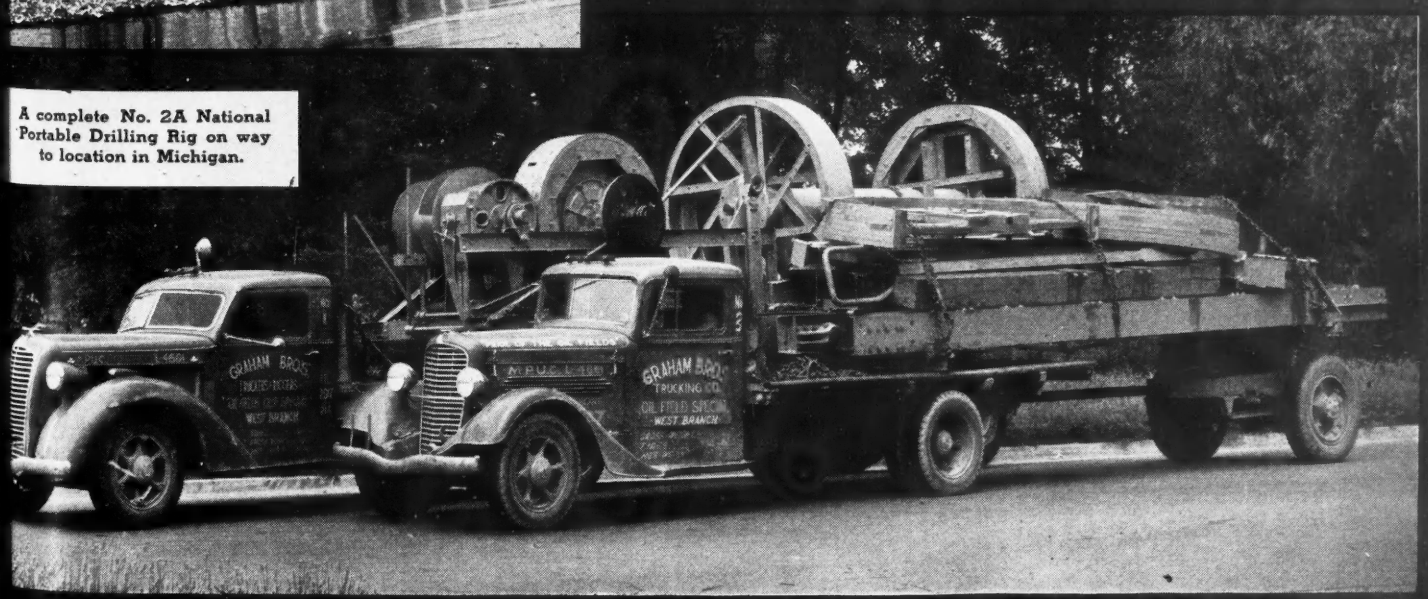
No. 2 —Rated capacity 2500 feet.
No. 2A —Rated capacity 3000 feet.
No. 3A6—Rated capacity 4000 feet.

Ask for Bulletin No. 63

NATIONAL

THE NATIONAL SUPPLY COMPANY

EXECUTIVE OFFICES: PITTSBURGH, PA. • GENERAL SALES OFFICE: TOLEDO, OHIO
DIVISION OFFICES: FT. WORTH, TEXAS; TULSA, OKLA.; TORRANCE, CALIF.



A complete No. 2A National Portable Drilling Rig on way to location in Michigan.

squeezing ordinarily is done in open hole, and to the thick sand section exposed. In any event, squeezing does not seem to have any harmful effect on the oil pay. About 40 percent of the squeeze jobs have been entirely successful; and of the remainder, all of the cases that have been studied have shown material improvement, with reductions in water produced from 60 to 100 percent down to from 5 to 15 percent. Some of the wells that were squeezed successfully had been entirely dead before they were re-completed; and, by squeeze cementing, wells in this condition have been resurrected and brought back to profitable production. Squeeze cementing at Conroe has proved to be economically advantageous, and the results obtained appear to be permanent, insofar as the water-affected part of the sand is concerned, at the time that the well is re-worked. Further encroachment of water into the field, with a consequent rise in the water-oil contact, undoubtedly will necessitate additional squeeze jobs at some future time.

Dickinson Field, Galveston County, Texas

Squeeze cementing to shut off bottom water or water coming from upper formations due to defective original cementing of casing has been highly successful in the Dickinson field. In fact, the record of all of the wells studied is 100 percent successful. Production in this field comes from a series of sands in the Frio formation which occurs from an average depth of 7800 feet down to around 9150 feet. The oil sands are generally quite thin and very lenticular, so that offset wells may not produce from the same horizon. Owing to this condition, it is general practice to drill the wells completely through any oil-bearing sand encountered, because the thickness of the sand usually cannot be estimated in advance. Such being the case, the wells frequently are carried into water-bearing sands, which must be shut off in order to obtain efficient oil production. As an example of what has been accomplished in this field, the re-completion record of the following well is presented.

The well was drilled to a total depth of 8166 feet, and 5½-inch casing cemented to the bottom of the hole. Oil sand was encountered at from 8118 to 8126 feet, and water sand at 8133 feet—the two sands being separated by a 7-foot shale break. The casing was perforated throughout the greater part of the oil-pay section; and the well, when first tested, made all water and no oil. The casing then was perforated from 8139 to 8144 feet with 23 holes, and a cement retainer set at 8131 feet. Twenty-two barrels of water were pumped into the formation, with an initial break-down pressure of 4000 pounds per square inch and a final water pressure of 3800 pounds per square inch. Then 25 sacks of slow-set cement, with a slurry weight of 15.5 pounds per gallon, were pumped down the tubing, with a maximum squeeze pressure of 4000 pounds per square inch. It is estimated that 21 sacks were forced against the formation, the cement remaining in the tubing being washed out through the circulation joint. The cement was allowed to set for 72 hours; and after the retainer and cement had been drilled out, the well was completed as a normal producer, making no water whatsoever.

Eureka Field, Harris County, Texas

The Eureka field has been troubled with water almost since the time of its discovery. The productive area consists of a fairly narrow band, limited on the outside by salt water. Production is obtained from sands which occur in a section from 7660 to 7740 feet in depth. Salt water generally is found in the lower part of the sands, the oil-water contact being dependent upon the structural position. Out of four wells studied, squeeze cementing effectively has shut off water in three instances, and failed to shut off water in one instance. The one failure, however, occurred in an edge well, where the total oil-pay section did not have a thickness of more than 5 feet, in contrast to an oil-pay thickness of from 20 to 25 feet found elsewhere in the field. An example of the results of squeeze cementing for the exclusion of water in this field, the re-completion record of the following well.

This well was drilled to a total depth of 7760 feet, and 5½-inch casing was set and cemented at 7753 feet. The oil sand was found at 7697 to 7715 feet. The casing was perforated opposite the oil sand, and the well completed making 85 percent water. A retainer was set at 7,673 feet, and water pumped into the formation through the original perforations, with a break-down pressure of 3200 pounds per square inch. Ninety sacks of slow-set cement, having a slurry weight of 16 pounds per gallon, were squeezed through the perforations, with a maximum squeeze pressure of 4400 pounds per square inch. The cement was allowed to set for 48 hours; and after the retainer and the cement had been drilled out, the well was recompleted making 582 barrels of oil per day, with no water and with a gas/oil ratio of 514 to 1.

Owing to the comparatively recent discovery of the Eureka field, it is impossible to predict the permanency of the results from the squeeze-cement jobs that already have been made. Undoubtedly, water encroachment eventually will cause a rise in the water-oil contact; and when this does occur, additional squeeze jobs will be required.

Heyser Field, Calhoun County, Texas

The Heyser field produces from a series of sands occurring in the Frio formation. It is the custom to drill the wells completely through this section and, after casing is set on bottom, to test successively the various horizons upward from the bottom of the hole by gun perforation of the casing and squeeze cementing. Although several separate squeeze jobs are required frequently, the final results generally have been very good. An example of the completion procedure used in this field is described in the record of the following well.

The well was drilled to a total depth of 6217 feet, and 5-inch casing set and cemented at 5787 feet. The casing was perforated at 5744 to 5749 feet, and on production test the well made all water. A retainer was set at 5727 feet, and 100 sacks of cement, with a slurry weight of 16 pounds per gallon, were pumped in with a maximum squeeze pressure of 3500 pounds per square inch. It is estimated that 90 sacks of cement were squeezed through the perforations. After the cement had set for 72 hours, the retainer and cement were drilled out, and the casing perforated with 12 shots between 5740 and 5744 feet. On production test, the well made no oil, gas, nor water. The same section of pipe then was re-perforated with 24 shots, and a cement retainer set at 5736 feet. Twenty-five sacks of cement, with a slurry weight of 16 pounds per gallon, were pumped down the tubing, of which it is estimated that 15 sacks were squeezed through the perforations. The maximum squeeze pressure was 3000 pounds per square inch. After the cement had set for 72 hours and the retainer and cement had been drilled out, the casing was perforated with 12 shots between 5728 and 5732 feet. On production test, the well made all water and no oil nor gas. A retainer then was set at 5725 feet; and 100 sacks of cement, with a slurry weight of 16 pounds per gallon, were pumped in, of which it is estimated that 80 sacks were squeezed through the perforations. The maximum squeeze pressure was 4250 pounds per square inch. The cement was allowed to set for 72 hours; and after the retainer and the cement had been drilled out, the casing was re-perforated at the same point, viz., 5728 to 5732 feet, with 12 shots; and on production test the well again made 100 percent water and no gas nor oil. The well then was plugged back, and the casing perforated in an upper sand from 5460 to 5463 feet with 9 shots, and the well completed making 127 barrels of oil per day and no water.

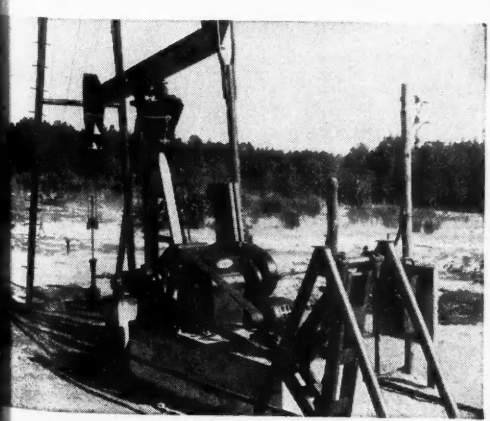
The completion record of the foregoing well is a very good description of the method which is now in

LOOK! WE'VE CERTAINLY REDUCED OUR LIFTING COSTS WITH...

PROFIT BY USING Purchased ELECTRIC POWER

...is one of thou-...of wells which is ...operated more eco-...ally by Purchased ...c Power. The av-... cost of Electric ... in a great many ...figures only 3% ... of the average ... price of the crude ...ed — a low pro-...duction cost!

PURCHASED ELECTRIC POWER



NOT JUST A FEW, but thousands of operators have reduced their production costs and increased their profits with Purchased Electric Power.

Now, when we say the cost of electric power is less, we don't merely refer to the kilowatt hour rate, but to the TOTAL NET COST, which includes SAVINGS made possible by lower first cost, less installation, operating and maintenance costs, higher efficiency, greater salvage value, extreme portability and other advantages. In other words, the over-all cost, of the fluid lifted, is lower.

For your benefit, your electric power company has accumulated many enlightening facts concerning the low cost of Purchased Electric Power used for production, pipeline, refining and drilling purposes. These facts, together with a study of your own power problems, are available without any obligation on your part. So why not see your electric power company right away!

ETROLEUM ELECTRIC POWER ASSOCIATION

Box 1498, Oklahoma City, Oklahoma

fairly common use in the Gulf Coast region for the successive testing of various sands during the process of well completion. The lower sand in this well, obviously, was found to be unproductive; therefore, after thorough test, it was squeezed off, and production then developed in an upper horizon.

South Clara Driscoll Field, Nueces County, Texas

Squeeze cementing for the exclusion of water in the South Clara Driscoll field has been quite satisfactory, and similar to the Dickinson field. The records of the jobs that have been studied have been 100 percent successful. Accumulation of oil in this field is due to the lensing out of the sands in the direction of a regional high, this being a type of oil occurrence quite characteristic of many of the South Texas fields. Owing to this condition, the productive sands are quite irregular in position and thickness. A water-bearing sand occurs almost directly below the oil pay; and few wells have been completed, before squeezing is applied, without some water showing. The record of a typical recompletion job in this field is presented as follows:

The well originally was drilled to 5327 feet, and 7-inch casing set and cemented at the bottom of the hole. The well later was plugged back to 5111 feet and completed in a sand found at from 5098 to 5107 feet. The gas/oil ratio in this sand was very high, and the well made 50 percent water on initial test. Before plugging back, a cement retainer was set at 5111 feet, after the casing had been perforated with 15 shots between 5114 and 5118 feet. Fifteen barrels of water were pumped into the formation, with an initial break-down pressure of 1300 pounds per square inch. One hundred and fifty sacks of slow-set cement, with a slurry weight of 16 pounds per gallon, were used; and it is estimated that 145 sacks were squeezed through the perforations. The maximum squeeze pressure was 2100 pounds per square inch. The cement was allowed to set for 24 hours; and after the cement and retainer had been drilled out, the well was re-completed making 226 barrels of oil per day and no water, with a gas/oil ratio of 440 to 1.

North Crowley Field, Acadia Parish, Louisiana

In the North Crowley field, five wells are producing from Miocene formations and one well from the Frio horizon. The oil-pay sections are thin, with free gas caps above in most instances. Cementing casing through the sand and completing through open perforations is standard procedure, although in one well sand troubles required that an inside strainer be set. A very interesting example of the results that may be obtained from squeeze cementing, both to reduce gas/oil ratios and to exclude water, is given in the following description of well "B." This well was brought in originally producing oil and salt water with a high gas/oil ratio. Cement was squeezed into a 5-foot perforated section, and the well brought in, without reperforating, in much the same manner as is used in the Lockridge field. On a short test this well produced the same amount of oil and salt water as it did previously, but with a great reduction in gas/fluid ratio. This appeared to indicate that the cement failed to set in the oil or water sand, and preferentially set in the gas sand. After a second squeeze and re-perforation, the well was brought in as a water-free oil well with a normal gas/oil ratio.

Well "A"

Seven-inch casing was set and cemented at 7984 feet. The producing sand was found at from 7744 to 7748 feet. The casing was perforated with 12 holes between 7742 and 7750 feet. On initial completion, salt water increased from 25 to 60 percent while bringing in the well. It, therefore, was killed, and the casing perforated with 10 holes at 7796 feet and below. A cement retainer was set at 7785 feet, and 68 sacks of cement squeezed through the perforations. A bridge plug then was set at 7738 feet, and the casing perforated with 12 holes between 7728 and 7735 feet. A retainer then was set at 7722 feet, and 45 sacks of cement squeezed through the perforations. After the cement had set and the retainer and cement had been drilled out, the casing was re-perforated between 7742 and 7748 feet. The well was washed, but failed to come in. The casing was re-perforated again between 7747 and 7751 feet, and the well washed in with an initial production of 655 barrels of oil and 517 m.c.f. of gas per day, with a tubing pressure of 1250 pounds per square inch through a ¼-inch choke. The well died about 2½ months after it had been completed, when water made its appearance and had increased to 80 percent of the total fluid. The well, however, had made 13,390 barrels of oil during this period.

As a work-over measure, the casing was perforated between 7765 and 7775 feet, and 90 sacks of cement squeezed through the perforations. The casing then was perforated from 7725 to 7734 feet, and 85 sacks of cement squeezed through the perforations. The casing then was re-perforated again from 7743 to 7748 feet, and the well washed in with an initial production of 183 barrels of fluid per day, of which 80 percent was salt water. The well flowed for a few days, and then died.

The first squeeze job was successful in eliminating water and allowed the well to be completed in a 4-foot oil-sand section. After 13,390 barrels of oil had been produced, the water had increased to 80 percent. Further squeezings were unsuccessful in reducing water percentage, but this may have been due to the fact that the very thin sand section practically was watered out as the result of the withdrawals of oil.

Well "B"

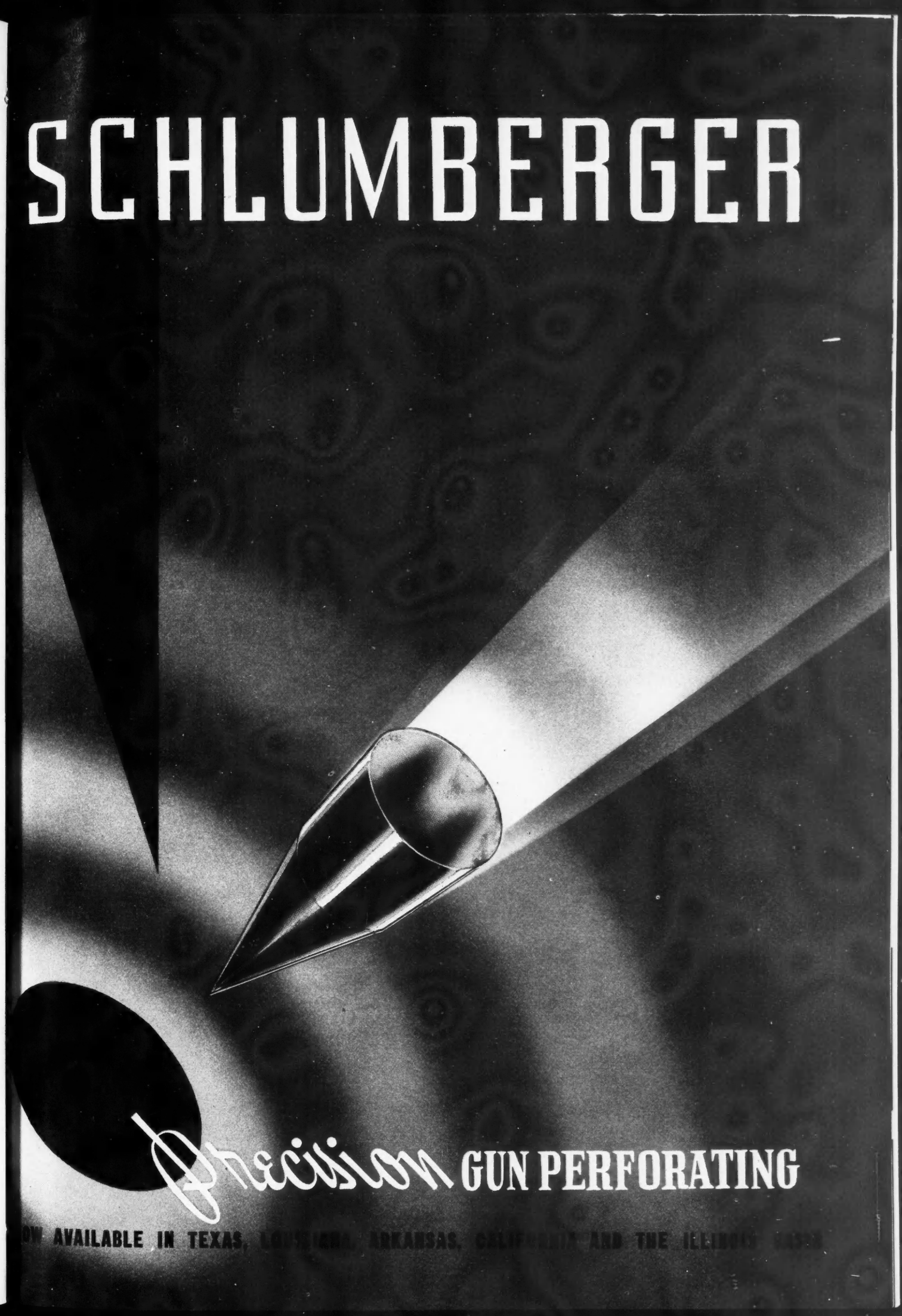
This well was drilled to the Frio sand, which was found at from 8608 to 8613 feet. Five-inch casing was set and cemented at 8661 feet. The well originally was completed by perforating the casing between 8608 and 8613 feet, with an initial production of 165 barrels of fluid per day, of which 10 percent was salt water, and a gas-fluid ratio of 2315 to 1 through a ⅛-inch choke, with tubing pressure of 2000 pounds per square inch. Twelve sacks of cement were squeezed through the original perforations, with a maximum squeeze pressure of 4000 pounds per square inch. The well was drilled out with clear water down to 8661 feet. Mud then was pumped in to displace the water, and the well began to show oil and gas. The well was mudded and the tubing hung at 8057 feet, and the well then washed in with a production of 156 barrels of fluid per day, of which 40 percent was water, and a gas-fluid ratio of 800 to 1 with a tubing pressure of 1050 pounds per square inch. The well was killed, and the casing re-perforated between 8608 and 8613 feet with 10 shots. Seventeen sacks of cement were squeezed through the perforations, with a maximum squeeze pressure of 4500 pounds per square inch. The casing was again re-perforated with 8 holes between 8607 and 8611 feet. Tubing was run in the hole and the well washed in, with a production of 32 barrels of oil per hour and no water. Tubing pressure was 1750 pounds per square inch, and the casing was packed off. The gas/oil ratio was 881 to 1 after a 2-day test.

The results of the first squeeze job on this well indicated that the cement did not set in the oil sand, as the well was brought in after the first squeeze without re-perforating. It is significant to note that the gas/fluid ratio was reduced greatly after the first squeeze; whereas the water apparently was not affected—showing that, in this case, the cement selectively set in the gas sand. After the second squeeze, the water was shut off, and the well after two days of production was water-free with a normal gas/oil ratio.

Roanoke Field, Jefferson Davis Parish, Louisiana

The well here described was drilled to the Frio sand, which was found from 8796 to 8837 feet. Seven-inch casing was set and cemented at 8849 feet. The casing was

SCHLUMBERGER



Precision GUN PERFORATING

NOW AVAILABLE IN TEXAS, LOUISIANA, ARKANSAS, CALIFORNIA AND THE ILLINOIS BASIN

perforated with 8 shots between 8823 and 8827 feet, and the well completed with an initial production of 568 barrels of oil per day and no water.

The well died after salt water appeared, and had increased to 70 percent of the total fluid. Before attempting to squeeze, an attempt was made to pump water into the formation to break it down. A pressure of 5600 pounds per square inch was held on the sand for 5 hours, and finally dropped to 4000 pounds per square inch. The well was shut in with a pressure of 4000 pounds per square inch for 10 hours, and the pressure dropped to 3400 pounds per square inch. One barrel of water then was pumped into the formation, with a pressure of from 4300 to 4600 pounds per square inch. Then 8.5 sacks of cement were squeezed against the sand, with a maximum pressure of 5300 pounds per square inch. After the cement had set and the retainer and cement had been drilled out, the casing was re-perforated from 8820 to 8823 feet. The well produced 13,000 barrels of oil before water again appeared, and 6 months after re-completion was flowing 50 percent water.

This job is very interesting because of the great difficulty experienced in squeezing. Although only 8.5 sacks of cement were squeezed into the formation, a successful water shut-off was obtained. It is believed that the later appearance of water was the result of normal encroachment in a thin oil-pay section.

Rodessa Field, Caddo Parish, Louisiana

Most of the remedial work in the Rodessa field for the exclusion of water has been accomplished by the use of the "dump-bailer" or displacement method of placing the cement. When squeeze-cement jobs have been used, they have been primarily for the purpose of shutting off an entire producing horizon. Records of two re-working squeeze-cement jobs for the exclusion of water follow:

Well "A"

This well was killed due to water encroachment. A portable unit was moved in; the 2-inch tubing pulled, 2½-inch drill pipe run into the hole, and the well cleaned to bottom at 6042 feet. The well was washed for 3 hours, and the drill pipe then pulled. A cement retainer then was set on 2-inch tubing at 5965 feet. Fifty barrels of water then were pumped in under a pressure of 3800 pounds per square inch. The water was followed by cement slurry which was allowed to set for 5 days. The well then was drilled down to 6033 feet, which was 9 feet off bottom, and the well swabbed free of water. A natural flow of oil followed, and the well was re-completed as a normal producer with no water.

Well "B"

This well had set mudded-off for almost 5 months before it was re-worked. The total depth was 6000 feet, and 5943 feet of 6⅝-inch casing had been set and cemented, and 4¾-inch liner was set from 5938 to 6000 feet.

The tubing was pulled, and 23 feet of liner was cut in the hole. The well then was acidized with 6000 gallons, which was followed with 24 barrels of water. The pressure broke at 1350 pounds per square inch. The well then was cemented with a retainer for a squeeze job between 5943 and 5961 feet, using 200 sacks of cement. It is estimated that 165 sacks of cement were placed against the formation, and 35 sacks were washed out through the circulation joint. The maximum squeeze pressure was 4100 pounds per square inch. The cement was allowed to set, and then drilled out to the bottom of the hole, and the well was deepened 10 feet to a total depth of 6010 feet. The tubing then was run to 5942 feet and the well completed on a ¼-inch choke, making 11 barrels of oil per day with a gas/oil ratio of 18,182 to 1, and a casing pressure of 1150 pounds per square inch. A packer then was run in on the tubing and set at 5982 feet, 21 feet below the top of the liner. After swabbing, the gas production increased progressively and the oil production decreased progressively, with the gas/oil ratio finally reaching 96,000 to 1. The well then was acidized with 200 gallons of acid, using oil to load and spot the acid. The acid went into the formation under vacuum. On production test after acidizing, the well made 54 barrels of oil in 18 hours through a 12/64-inch choke, with a tubing pressure of 400 pounds per square inch, a casing pressure of 1000 pounds per square inch, and with a gas/oil ratio of 11,500 to 1.

Illinois—General

Records of 23 squeeze-cement jobs for the exclusion of water in various Illinois fields have been available for study. These are considered separately, and are not included in the following general analysis of the results of squeeze cementing, inasmuch as conditions are somewhat different from those which usually are encountered in the Gulf Coast fields. Squeezing has been used for three distinct purposes in Illinois, viz: 1, for the exclusion of water coming from around a defective bottom-hole cement plug; 2, for the exclusion of water in the lower part of the sand in open hole; and, 3, for the repair of leaking casing.

Of the first type, for the correction of leakage around the cement plug, there have been three attempts. Two of these jobs have been entirely successful, and one was a failure. In all three of these jobs a cement retainer has been used which was set about 30 feet above the bottom of the casing. From 9 to 140 sacks of cement were used, with maximum squeeze pressures of from 1200 to 1500 pounds per square inch. In the one job that was a failure, there was only 1 foot of open hole exposed from the bottom of the casing to the top of the cement plug, and the water may have been coming from this exposed section rather than from around the plug.

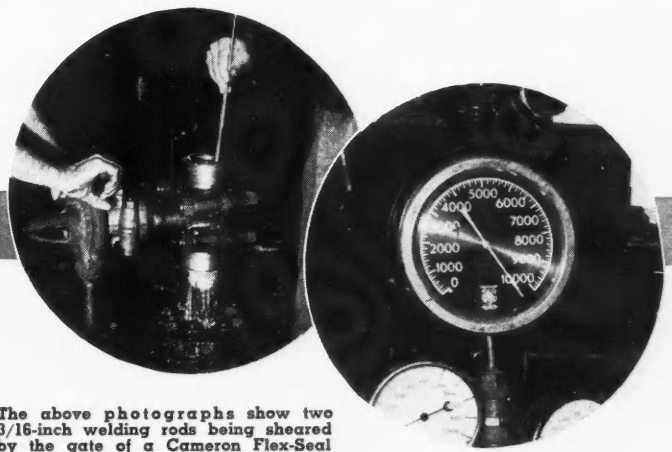
Of the second type, one job was performed to shut off a sand permanently which an electrical log had shown to be entirely water-bearing. A cement retainer was set 9 feet above the bottom of the casing, and 51 sacks of cement were squeezed into the sand with a maximum pressure of 1750 pounds per square inch—with entirely satisfactory results. In two other jobs, wells which were making one half and two thirds water, respectively, were treated. In the first well, 40 sacks of cement were squeezed into the formation with a maximum squeeze pressure of 1250 pounds per square inch; in the second well, 27 sacks of cement were squeezed into the formation with a maximum pressure of 1600 pounds per square inch. Cement retainers were used on both wells, being set 21 feet and 10 feet above the bottom of the casing, respectively. The results obtained from these two jobs are very doubtful, there being no great reduction in the percentage of water produced.

A very interesting squeeze-cement job is given in the record of the following well. The casing was set 2 feet too high; and, due to caving shale, the oil production dropped from 20 barrels in 8 hours to zero. A retainer was set 33 feet above the bottom of the casing, and 40 sacks of cement were squeezed in open hole with a maximum pressure of 1600 pounds per square inch. After the cement had set, and the retainer and cement plug had been drilled out, the well was shot. The shale continued to cave after the shot, and the hole made no oil. This is the only instance which has come to our attention indicating that squeeze cementing apparently has plugged off an oil sand. The oil-pay section in this well was only 6 feet in thickness; and, there being no water sand nor gas-pay section exposed, the cement was forced, with no other alternative, against the oil-bearing sand. The cement slurry presumably intruded into

CAMERON FLEX-SEAL MUD VALVE

SHEARS AND SEALS ON TWO 3/16-INCH WELDING RODS—

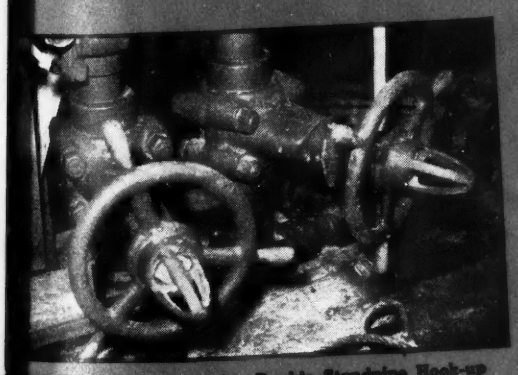
Holds 10,000 Lbs. Pressure!



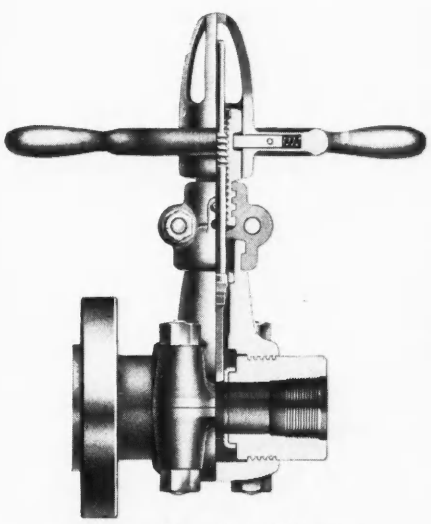
The above photographs show two 3/16-inch welding rods being sheared by the gate of a Cameron Flex-Seal Mud Valve. After imbedding the sheared sections of the rods in the resilient flow-way insert, the valve was subjected to more than 10,000 pounds pressure without signs of a leak.

lowout Preventer Fill-up Line

lush Pump Relief Service



Double Standpipe Hook-up



Cross-section view of Cameron Flex-Seal Mud Valve, illustrating its mechanical features and simplicity of design.

To demonstrate the extremely high sealing efficiency of Cameron Flex-Seal Mud Valves, this destructive test was made recently in the Cameron shops on a 2" valve: With the gate in open position, two 3/16" welding rods were inserted in the valve; the gate was then closed by hand until the welding rods were sheared and imbedded in the resilient flow-way insert. As shown in the photograph above, hydraulic pressure in excess of 10,000 lbs. was then applied to the valve without the slightest trace of a leak.

The obvious conclusion is that even under extremely abnormal conditions, the Cameron Flex-Seal Mud Valve can be relied upon to effect a pressure-tight seal. The resilient flow-way insert not only imbeds cuttings and other foreign matter when the heat-treated gate is closed, but absorbs, at a very slow rate of wear, the cutting action of abrasive-laden fluid moving at high velocity. The entire valve is of such rugged construction that it will safely withstand any excessive pressure that may be imposed on the mud manifold.

Unbiased tests under the most severe field conditions have proved that the Cameron Flex-Seal Mud Valve requires 93% less maintenance than conventional types of valves. It may be completely overhauled in the field with rig tools by the drilling crew. The valve opens and closes easily under full rated test pressure of 6000 pounds. Interested operators are invited to write for illustrated descriptive folder.

CAMERON IRON WORKS, INC.

711 MILBY STREET HOUSTON, TEXAS

EXPORT: 74 Trinity Place, New York, N.Y.

California Distributor: HOWARD SUPPLY COMPANY, Los Angeles

the sand (as fingers) along the bedding planes to an extent sufficient to prevent the flow of oil. That this intrusion extended back for a considerable distance is indicated by the fact that a shot of nitroglycerin did not shatter the rock sufficiently to permit the movement of oil into the hole.

Records of 13 squeeze jobs for the shutting off of casing leaks have been studied from wells in Illinois fields. On one well, it was found that there was a leak around the casing shoe. Fifty sacks of cement were pumped up around the outside of the casing, but did not effect a shut-off owing to an insufficient amount of cement. On a second squeeze, 91 sacks of cement were pumped into the leak with a maximum pressure of 1500 pounds per square inch. A complete and permanent water shut-off resulted. In two other wells, leaks around the casing seat have been eliminated with equally good results by the use of 75 and 125 sacks of cement, with maximum squeeze pressures of 1000 and 1200 pounds per square inch, respectively. In another well, a leak in the casing seat was closed effectively, but bottom-hole water was not excluded successfully by squeezing; therefore, the well was abandoned.

On three wells leaks in the casing in the upper part of the hole have been eliminated successfully by squeeze cementing. From 25 to 100 sacks of cement were used with maximum squeeze pressures of from 1000 to 1500 pounds per square inch.

Cement retainers have been used on all of the squeeze jobs herein described. The Dale photoelectric cell is used extensively to detect the point in the casing or in the open hole from which the water is coming. Electrical logs also have been most helpful in establishing the point of water entrance.

Ten of the 23 squeeze jobs have been entirely successful in the exclusion of water. Of the remaining 13 jobs, 3 failures may be attributed to insufficient cement, and 1 failure to the improper setting of the cement retainer. In one well a split casing was closed after three successive squeezes. The maximum pressure of the first squeeze was 1000 pounds per square inch, and 100 sacks of cement were used. The maximum pressure of the second squeeze was 1600 pounds per square inch, and 85 sacks of cement were used. The maximum pressure of the third squeeze was 3300 pounds per square inch, and 7 sacks of cement were used.

The average of the maximum squeeze pressures attained on 18 different jobs for which this information is available is only 1492 pounds per square inch. This is very much lower than the average for the Gulf Coast region. There seems to be no relation between high squeeze pressures and successful results, such as has been found in other areas. Most of the holes on which squeeze jobs have been performed are less than 2000 feet in depth; and there might be some question as to whether very high squeeze pressures could be employed safely, particularly in view of the fact that the rocks are probably much more rigid than the sands of southern Louisiana and Texas. If rupture along the bedding planes does take place—and this certainly is indicated in the record of one well previously cited—the more rigid beds, when once separated, would permit the cement to move back freely into the formation under relatively low squeeze pressures. Under such conditions, multiple-batch jobs or gel types of cement might give much better results.

Similar to the results that have been obtained in other areas, it is believed that the presence of an impervious bed between the oil and water sands will increase the degree of success that may be expected from squeeze cementing in the Illinois fields.

The results of 68 squeeze-cement jobs for the exclusion of water in part have

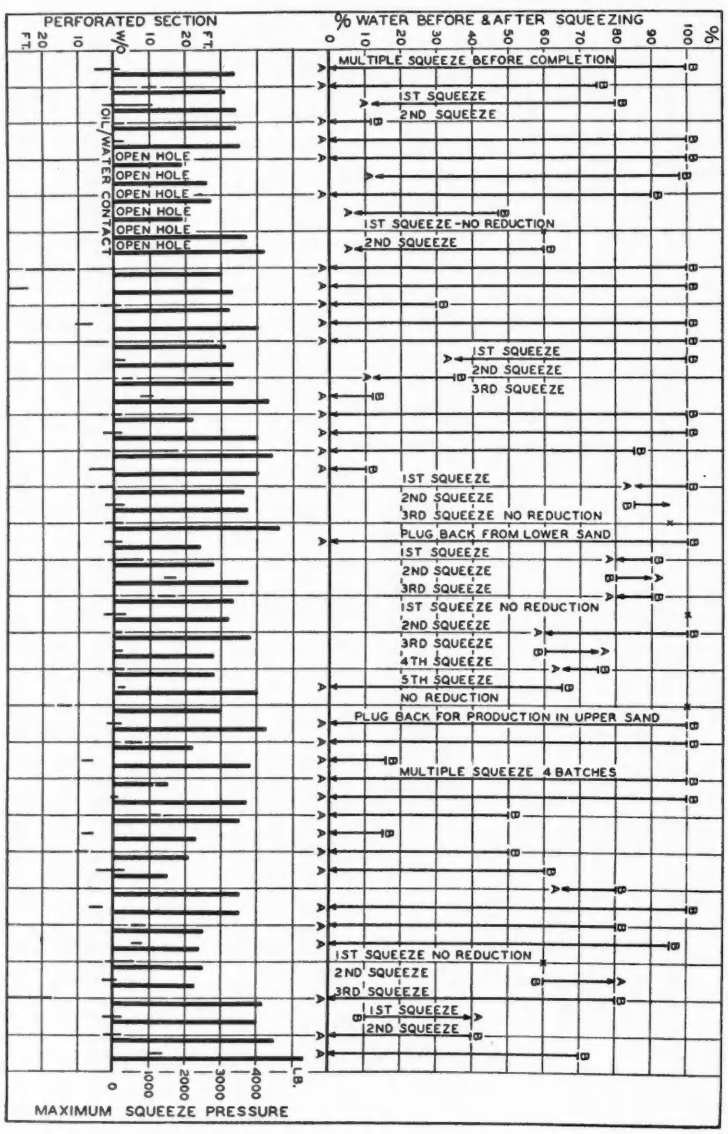
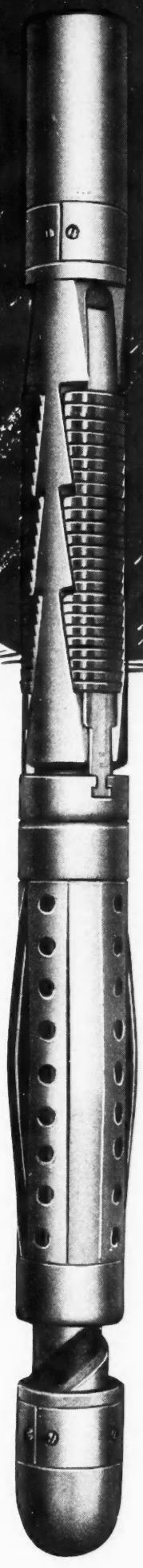


FIGURE 11
Graphical Analysis of Results of Squeeze Cementing for the Exclusion of Water.



DESCRIBED IN YOUR 1939 COMPOSITE CATALOG —See Pages 198 and 199 for data on Casing and Tubing Sizes

FREEZES OVER...

YET RELEASES AS EASILY AS YOU CAN SAY **"LET GO"!**

BAASH-ROSS ROTARY *RELEASING* SPEAR

BAASH-ROSS TOOL COMPANY · LOS ANGELES · HOUSTON · OKLAHOMA CITY · NEW YORK

TABLE 7

Comparison Between the Results Obtained by Squeeze Cementing for the Exclusion of Water and in the Reduction of Gas-Oil Ratios

(Illinois figures not included)

	Water Exclusion	Gas-Oil-Ratio Reduction
Successful jobs, per cent	61	44
Partly-successful jobs, per cent	14	20
Failures, per cent	25	36
Average maximum squeeze pressure, lb. per sq. in.:		
Successful jobs	4,043	3,001
Partly-successful jobs	1,945	2,541
Failures	3,371	2,376

been plotted graphically in Figure 11 in a manner similar to that which was used to show the results obtained in the reduction of gas/oil ratios. (These do not include the results obtained from squeeze cementing in Illinois.) Out of these 68 jobs, 42 have been successful, 9 have been partly successful, and 17 have been failures. (Successful jobs are designated as those in which there has been a complete water shut-off; partly-successful jobs are designated as those in which the water percentage after squeezing is 20 percent or less of that which it was before squeezing; and failures are designated as those jobs in which the water percentage after squeezing is more than 20 percent of that which it was before squeezing.)

Fourteen of the squeeze jobs were made in open hole. Of these, four were successful, seven were partly successful, and three were failures. This would indicate that better results may be anticipated from squeezing through gun perforations in the casing.

The relation of the maximum squeeze pressure to the success of excluding water is very interesting. The average maximum squeeze pressure of the successful jobs was 4043 pounds per square inch. The average maximum squeeze pressure of the partly-successful jobs was 1945 pounds per square inch. (The average figure for the partly-successful jobs is not exactly comparable with the others, because it includes 4 low-pressure squeezes from a California field.) The average maximum squeeze pressure of the failures was 3371 pounds per square inch. From this we may conclude that very high maximum squeeze pressures are essential for the exclusion of water. Conditions will vary, of course, from field to field; but from the information now available it appears to be reasonably safe to say that the probability of success will be enhanced greatly if a maximum squeeze pressure of 4000 pounds per square inch, or greater, is attained; there will be a fair chance of success with maximum squeeze pressures of from 3500 to 4000 pounds per square inch; and the percentage of failures will likely be quite high with maximum squeeze pressures of less than 3500 pounds per square inch. It is realized that it is virtually impossible to attain a maximum squeeze pressure of 4000 pounds per square inch in one squeeze job in certain fields, particularly in those in which the initial break-down pressure will vary from 1000 to 1500 pounds per square inch. Under such conditions it is believed that the use of multiple-batch jobs or of gel types of cement will afford a solution to the problem of obtaining a sufficiently high maximum squeeze pressure that will give effective water exclusion.

The relation between the position of the perforated section to the oil-water contact is not so striking nor so clearly defined as it was in the case of the reduction of gas/oil ratios, where it could be shown definitely that a close proximity of the perforated section, through which the cement is squeezed, to the actual gas/oil contact was most essential for successful results. Perhaps the reason for this is that, in quite a few of the jobs which have been included in the graphical diagram, the cement has been squeezed through perforations to shut off water in sands which are to a great extent water-bearing and, therefore, the position of the perforations has no comparative relationship to an oil-water contact. Furthermore, the oil pay may be separated from the water pay by a shale break of several feet in thickness. By eliminating, as far as possible, these exceptional conditions, and restricting the analysis to water exclusion in one particular horizon, it may be stated then that the average distance of the nearest perforation to the oil-water contact in the successful squeeze jobs is 2.2 feet; in the partly-successful jobs the average distance is 2 feet; and in the failures the average distance is 4.3 feet. Perforating and squeezing in close proximity to the oil-water contact, therefore, may be regarded as a most desirable procedure, and it is believed that the reasons proposed in the discussion of reduction of high gas/oil ratios are equally applicable to water exclusion. Two to 4 feet of perforated section appears to be ample for successful squeezing.

As it was in the reduction of high gas/oil ratios, it is equally difficult to predict the permanency of water exclusions by squeeze cementing. The removal of oil from the reservoir certainly will have an effect on the position of the gas/oil and the oil-water contacts. As these readjustments take place in the reservoir, water or excessive quantities of gas may appear in the wells due to no failure of the previous squeeze jobs. When this takes place, squeezing or some other exclusion method will have to be resorted to in order to permit the efficient production of oil.

Before concluding this section, it will be of interest to compare the results that have been obtained from squeeze-cement jobs for the exclusion of water with the results from squeeze cementing in the reduction of gas/oil ratios. This comparison is given in Table 7.

It would appear from this comparison that the probability of success in the exclusion of water by squeeze cementing is somewhat greater than in the reduction of high gas/oil ratios. It is notable also that the average difference in the maximum squeeze pressures in both the successful jobs and the failures—the comparison between the partly-successful jobs not being reliable for reasons previously mentioned—is about 1000 pounds per square inch. This would indicate that it is considerably easier to break down a gas pay by water pressure and force cement slurry against and into it than it is in a water-bearing formation. It may be recalled that this phenomenon also was indicated in the results obtained from squeeze cementing in the Iowa field.

In the successful gas/oil-ratio-reduction jobs it was found that the average distance of the nearest perforation through which cement slurry is squeezed is 1.6 feet, whereas in the successful water-exclusion jobs—eliminating squeezes in primarily water-bearing sands—the average distance is 2.2 feet. In both types of jobs a close proximity of the perforated section to the contacts appears to be most desirable.

FRANKS MFG. CORP. Complete Line

WELL SERVICING AND DRILLING UNITS

PAGES 683 TO 702 IN THE

1939 Composite Catalog

Pioneered
Final Friction
Drive Clutch

Our products described in this COMPOSITE CATALOG

Pioneers of
Slim-Hole
Drilling Units

★ ROTARY DRILLS

Portable Truck, Trailer, and Skid Type Drilling Units with or without hydraulics

★ WINCHES . . .

Truck Motor Driven and Skid Type

★ MASTS . . . .

Pipe and Derrick Type Telescoping

★ SPUDDING . .

Truck Motor Driven and Skid Type Units With or Without Sand Reel or Mast

★ POWER TAKE-OFFS

Bevel, Spur, and belt split-shaft types.

FRANKS MFG. CORP.

WELL SERVICING AND DRILLING UNITS

P. O. Box 137, Whittier Station — Tulsa, Oklahoma

Export Office: 149 Broadway, New York, N. Y.

FRANKS Model A 4000 AC Slim-Hole Portable Rotary Drilling Unit

WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Mexican oil situation discussed at White House

President Roosevelt last week personally intervened in the Mexican oil situation, requesting Mexican Ambassador Castillo Najera to speed up negotiations over the expropriation of American properties.

At his semi-weekly press conference the President disclosed that on June 15 the ambassador, accompanied by Sumner Welles, Undersecretary of State, had a 15-minute conference at the White House, at which the oil situation was discussed. He refused to divulge any further information regarding the meeting.

Conversations seeking a basis for an agreement have been going on at the State Department for some time, and on June 17 Secretary Hull reaffirmed that the department would give to Donald Richberg and other representatives of the American companies involved whatever assistance is possible in bringing about a prompt and satisfactory adjudication.

It is insisted in official quarters that nothing can be divulged as to the negotiations which are going on until something tangible is arrived at.

Benedum & Trees enter Canada with big block

Benedum & Trees Oil Company entered the Canadian development picture last week in one of the largest oil lease deals since crude was first discovered in Alberta. The Pittsburgh firm took over leases of 161,000 acres in the Pouce Coupe area of northwestern Alberta from three Alberta firms and two individuals. The deal involves the payment of $600,000 in royalty and an interest in the corporation being formed with development of the structure.

The deal calls for work to commence within 30 days on deepening Guardian Oil Company's No. 1, Section 7, Township 80, Range 12-w6, which is standing at 2460 feet. Besides the Guardian company, firms and individuals from whom the Pittsburgh concern acquired the acreage are Empire Crude Oil Company, Ltd., Howey Oil Company, F. I. Batcheller, of Edmonton, and G. M. Bell, of Calgary.

The area has long been considered as favorable for commercial oil and gas production, a large wet gas well having been drilled some years ago. Difficulty in bringing it under control prevented its commercial completion. The British Columbia government is interested in oil and gas possibilities on that part of the structure that extends west of the Alberta provincial boundary, and currently has a geological survey party under the direction of Prof. M. Y. Williams, of the University of British Columbia, working in the area. A second party headed by Dr. A. H. Cox, of Cardiff, Wales, is soon to enter the area also. British government officials plan a drilling program if results of the surveys are encouraging.

Benedum & Trees representatives who negotiated the agreement were John F. Morrow, personal agent; John F. Hardy; L. L. Huntley, geologist who became familiar with the area in 1912 and 1913 and studied it again two years ago; John O. Wicks, of the legal firm of Weller, Wicks & Wallace, Pittsburgh, and William Jones, technician.

Italy's crude output down in first quarter

Italian production of crude petroleum during March, 1939, totalled 1034 metric tons, an increase of 29 metric tons or 2.89 percent over the February, 1939, production of 1005 metric tons, but a decrease of 160 metric tons or 13.40 percent under the March, 1938, production of 1194 metric tons, according to John L. Goshie of Rome. The total production for the first three months of 1939 amounts to 2972 metric tons, a decrease of 336 metric tons or 10.16 percent under the corresponding 1938 production of 3308 metric tons.

Production of petroleum products (from domestic crude) declined sharply during March, the aggregate volume produced totalled 804 metric tons, a decrease of 44.89 percent under the February volume of 1459 metric tons and of 19.92 percent under the March, 1938, volume of 1004 metric tons. The aggregate volume produced during the first three months of 1939 totalled 3132 metric tons, an increase of 234 metric tons, or 8.07 percent over the corresponding 1938 volume of 2898 metric tons.

During the first quarter of the year Italy imported 4,501,040 quintals of crude petroleum valued at 107,172,000 lire, an increase in volume of 1,131,147 quintals or 33.57 percent and in value of 3,198,000 lire or 3.07 percent over the corresponding 1938 imports of 3,369,893 quintals valued at 103,974,000 lire.

First quarter imports from the United States, the principal source of origin, amounted to 2,354,837 quintals (52.32 percent of total imports), an increase of 877,875 quintals or 59.44 percent over the corresponding 1938 imports of 1,476,962 quintals (43.83 percent of total).

During the 1939 period under review, Mexico assumed the position as second principal supplier, accounting for 484,106 quintals (10.76 percent of total) of the first quarter of this year's imports as compared to zero of the corresponding 1938 imports.

Imports from Albania increased from 224,140 quintals (6.65 percent of the total) during January 1-March 27, 1938 to 438,496 quintals (9.74 percent of the total) during January 1-March 27, 1939, an increase of 214,356 quintals or 95.63 percent.

Germany's output up

Production of crude oil in Germany, which amounted to 170,260 tons in the first quarter of this year, represented an increase of over 22 percent more than was produced in the first quarter of last year, when 138,868 tons were recovered.

Tax hike lowers Ontario collections, says premier

Declaring it was a "fallacy to tax beyond a reasonable limit," Premier Hepburn of Ontario, Canada, last week admitted that his government's increase of 2 cents in the gasoline tax resulted in a decrease of $45,000 in collections for April over the corresponding month a year ago. "There is a law of diminishing returns," the premier said. "It is possible that the tax is defeating its own aims."

The increased tax, making Ontario's gasoline levy the highest of any state or province on the continent, became effective April 1, and the first month's collections are the only receipts thus far tabulated.

Trend of production still up in Netherlands Indies

Total crude oil output in the Netherlands Indies amounted to 1,914,583.2 metric tons in the first quarter of 1939 as compared with 1,916,915.7 metric tons in the previous three months and 1,805,471.4 metric tons in January-March, 1938, inclusive, according to Basil D. Dahl of Batavia, Java. Compared with the fourth quarter, 1938, increases in production were registered by the oil fields in Palembang, Djambi and Ceram, but smaller output was shown by those in North Sumatra, East Borneo, Tarakan and Java.

Details of the above as compiled by Dahl, follow:

Netherlands Indian Crude Oil Production (In Metric Tons)

Oil Fields	First Quarter 1938	Fourth Quarter 1938	First Quarter 1939
Java & Madura	251,199.4	210,529.7	209,853.5
North Sumatra	225,894.1	251,064.2	233,118.4
Palembang	638,324.6	711,261.8	728,419.0
Djambi	233,140.5	278,240.7	291,538.4
East Borneo	249,172.8	254,823.9	242,086.8
Tarakan	186,602.7	191,839.9	188,551.3
Ceram	21,137.3	19,155.5	21,015.8
Total	1,805,471.4	1,916,915.7	1,914,583.2

THE TAPERED DOUBLE GRIP DRILL PIPE ASSEMBLY IS . .

Pittsburgh Special

(PATENT NO. 1,942,518)

Because of the design of the Pittsburgh Special Drill Pipe "land" area, TAPERED in exact alignment with the threads, the gripping power of the tool joint counterbore increases as the joint is tightened. Thus the positive seal, the added support given to the last engaged thread and the increased strength of the drill stem is made fully effective and permanently safe.

Pittsburgh Special Drill Pipe conforms to A. P. I. Specifications as to pipe sizes, grades of steel, and taper and form of threads, and it makes up conventionally. The Double Grip eliminates the need of shoulder welding. Available in internal upset and external upset internal flush; right hand and left hand threads. Mating tool joints are available from tool joint manufacturers licensed to make them. For full information write for Pamphlet No. 306.

PITTSBURGH STEEL COMPANY

PITTSBURGH, PENNSYLVANIA

New York Cleveland Detroit Chicago Tulsa Houston Los Angeles

Pipe Storage Yards: MEMPHIS, TENN. . . . HOUSTON, TEXAS . . . E. SAN PEDRO, CALIF.

Export Distributors: LUCEY EXPORT CORPORATION, NEW YORK, N. Y., U. S. A.

Hydrostatic Tension Testing

A new feature of Pittsburgh Seamless Casing, both A.P.I. and Pittsburgh Special, Acme Thread,—every length is *hydrostatic tension tested.* Ask for Special Bulletin No. 308.

Pittsburgh Special DRILL PIPE

with the DOUBLE-GRIP JOINT

THERE IS NOTHING EQUAL TO SEAMLESS

MEN IN THE INDUSTRY'S NEWS

FRANK PHILLIPS, chairman of the board of Phillips Petroleum Company, was the honor guest at a dinner at a Dallas country club June 14, with prominent oil men and bankers of Dallas and Fort Worth present. He was in Dallas for a brief visit with his son, John G. Phillips, who is associated with a steel firm.

HOWARD BOYD, former chief scout for Magnolia Petroleum Company, Dallas, and more recently in the company's land department at Wichita, Kansas, has been assigned to lease buying activities near Lexington, Kentucky.

RALPH STEINMAN, chief scout for Sinclair Prairie Oil Company, Tulsa, visited the company's West Texas district headquarters at Midland early last week.

S. M. BRISCOE, superintendent of right-of-way and claims for Stanolind Pipe Line Company, Tulsa, will retire July 1 under the plan inaugurated by the concern January 1. Briscoe has been engaged in pipe line work since 1909. Three years previous he moved to Independence, Kansas, from Hartford City, Indiana. He joined the Prairie Oil & Gas Company in 1907 and two years later he was transferred to its pipe line department. Next he was with Oklahoma Pipe Line Company when its line was laid from near Tulsa to the North Louisiana fields. He was with Magnolia Petroleum Company as superintendent of right-of-way when its early lines were laid in Texas. He went with Sinclair Pipe Line Company in 1918 and was with that organization until Stanolind Pipe Line Company became full owner of the Sinclair system in 1931.

S. F. SHAW, consulting engineer for Anglo-Canadian Oil Company, Ltd., has left for Calgary, Canada, where he expects to remain for a few weeks.

DR. BEN H. PARKER, Colorado School of Mines, has taken leave of absence for one year to undertake geological investigations for the Argentine government of South America. According to the announcement of Professor Francis M. Van Tuyl, the head of the department of geology, Colorado School of Mines, Doctor John C. Haff, University of Wichita, will replace Doctor Parker until his return from South America.

R. CLARE COFFIN, Stanolind Oil & Gas Company, last week was confirmed as president of the Tulsa Geological Society, following election of officers of the society May 29. Other officers are Sherwood Buckstaff, Shell Petroleum Company, first vice president; Lee C. Lemar, Carter Oil Company, second vice president; Louis H. Inkert, The Texas Company, secretary-treasurer; Dr. A. N. Murray, Tulsa University, editor, and Maurice Teis, Homestake Companies, associate editor. Members of the council are Robert H. Wood, Merritt H. Brown, Russell S. Tarr and Sam Ritter.

H. E. CHILES, JR., Robert L. Wood and H. E. Chiles, Sr., are organizers of the Western, Inc., incorporated last week as a pipe line company with headquarters at Seagraves, Texas.

WILLIAM A. WATKINS, Carter Oil Company, was elected chairman of the Illinois Basin Chapter of the American Petroleum Institute when 65 oil men held an organization meeting in Mattoon, June 14. Robert W. McIvain, Jr., Olney, superintendent of the Illinois producing division of the Pure Oil Company and vice chairman of the eastern district of the A.P.I., presided at the meeting.

Other officers named were Bart DeLaat, Pure Oil Company, and Jake Haas, Adams Oil Company, vice chairman.

W. T. RADFORD, assistant superintendent of production for Humble Oil & Refining Company at Wink, Texas, is vacatioing in Kentucky.

R. J. BOYLE, R. N. Gresham and T. M. McCarthy have incorporated Catarina Oil Company under Texas laws, and have established headquarters at Catarina.

RAYMOND L. HARPER has been promoted from operator to plant foreman at the Rattlesnake stablization plant of Continental Oil Company and Santa Fe Corporation located at Shiprock, New Mexico. He succeeds P. F. Elmore, who has been transferred as plant foreman to the new Continental Oil Company plant at Ville Platte, Louisiana.

Petroleum Accountants elect Louis A. Williford president

Results of the election of officers and directors of the Petroleum Accountants Society of Los Angeles for the coming fiscal year follow: Louis A. Williford, Macmillan Petroleum Corporation, is the new president; William A. Russell, Seaboard Oil Company of Delaware, and Dwight A. Moore, Wilshire Oil Company, are the new vice presidents; and Irving J. Hancock, Union Oil Company of California, is secretary-treasurer. Of the three directors, Irving J. Hancock, Union Oil Company, and Charles K. Slack, General Petroleum Corporation, were re-elected, and Stanley J. Anderson, Ring Oil Company, was elected to replace D. S. Kilgour, California Oil and Gas Association, retiring president.

Williford, the new president, has been active in accounting work since 1920. After education at both the University of Illinois and Indiana University, he joined the regular army in 1917, serving as both lieutenant and captain and resigning in 1920. From 1920 to 1922 he was cost accountant with the Busch-Sulzer Brothers Diesel Engine Company, St. Louis; from 1922 to 1923 he was an accountant with Price, Waterhouse & Company, Los Angeles; from 1923 to 1929 he was chief accountant and auditor with The Petroleum Company, Los Angeles; and from 1929 to the present he has been with the Macmillan company, since 1930 as accounting manager and tax man. He is a member of Delta Upsilon fraternity and has been a director of the Petroleum Accountants Society for five years.

W. D. McBEE, geologist for Carter Oil Company at St. Elmo, Illinois, has been transferred to Wichita, while William Knuckolls, geologist, has been transferred to Mattoon, Illinois. A. M. Sullivan, formerly at the company's office in Owensboro, Kentucky, succeeds McBee in St. Elmo. Knuckolls' successor has not yet been named.

JEROME B. (JERRY) SASSE, Houston geologist, recently returned from an extended stay in Tennessee and Kentucky, where he was engaged in geological work.

BERT SCHWARZ, division superintendent for Seaboard Oil Company, was in Corpus Christi last week looking over the company's activities in the Texas Lower Coast area.

G. H. BLANKENSHIP, Centralia operator, has been named chairman of a special oil industry membership committee of the chamber of commerce in that Illinois basin oil center. Members of the committee are John Pugh, E. W. Ellsworth and John Page Wham.

TED CADY, scout for Continental Oil Company, has returned to his Wichita base following a tour of southern and western Nebraska.

C. R. "PIP" ROSS, vice president of Ross Oil & Gas Company, has left Sedan, Kansas, for Salem, from where he will participate in Illinois basin oil activity.

PRESIDENT DAN J. MORAN headed a party of 45 Continental Oil Company officials who toured the tri-state area of Illinois, Indiana and Kentucky last week.

J. E. MABEE, W. M. Pyle and H. C. Fitzpatrick last week organized Fitzpatrick Drilling Company as a Texas corporation with headquarters at Midland.

J. L. HASSETT, A. V. Ettelbrick and C. L. Weigel have organized Casey Natural Gas Company as an Illinois corporation to engage in operating petroleum, oil and gas properties. Offices have been established at Casey.

J. DAVISS COLLETT, JR., consulting petroleum engineer, discussed "Some Commercial Applications of Bottom-Hole Pressure" before the weekly meeting of the Houston Geological Society on June 15.

DIED:

PAUL M. THORP, 51, an employe in the engineering department of Magnolia Petroleum Company, Dallas, for 23 years, died June 7 in a St. Louis hospital following a brain operation. The body was returned to Dallas for burial.

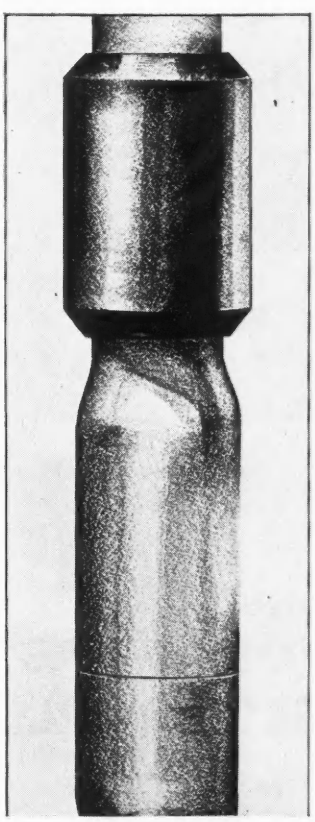
ARTHUR H. BEITMAN, 52, president of Puretex Chemical Works, died June 11 in a Fort Worth hospital from chemical poison accidentally inhaled while working in the company's laboratory on a new solvent for acidizing oil wells.

Would you pour Rotary Mud into your ENGINE BEARINGS?

Think what would happen if you used rotary mud instead of lubricating oil in your motor. Your motor wouldn't last long. Yet, in your drilling well, with *unprotected* drill pipe, this very thing happens. The pipe rubs and grinds against the casing, aided and abetted by the rotary mud laden with the abrasive cuttings from the drill. Your drill pipe tool joints wear down; your casing gets thinner and thinner. But there's a way to prevent this. Install Patterson-Ballagh Drill Pipe and Casing Protectors.

ROTARY MUD *is devastating to metal-to-metal contact*

Rotary mud is a necessary complement in every rotary drilling well—but it plays havoc with the metal-to-metal contact of tool joints to casing. It grinds like emery. The shiney appearance of tool joints is an indication of the excessive wear. Friction, too, is excessive. Patterson-Ballagh Protectors are the solution.



ROTARY MUD *is a slick lubricant for rubber*

Paradoxically, rotary mud is converted into an excellent lubricant when in contact with rubber. Auto wheels spin in mud. That's what occurs in a well when the string of pipe is equipped with Patterson-Ballagh Protectors. Least friction; no metal-to-metal contact. It's the economical way to drill. Ask for descriptive Catalog.

PATTERSON-BALLAGH ALL-RUBBER PROTECTORS

PATTERSON-BALLAGH CORPORATION
Plant and General Offices: 1900 E. 65th St., Los Angeles

Mid-Continent Office: 1506 Maury St., Houston
New York City Office: 39 Cortlandt St.

ALL THIS

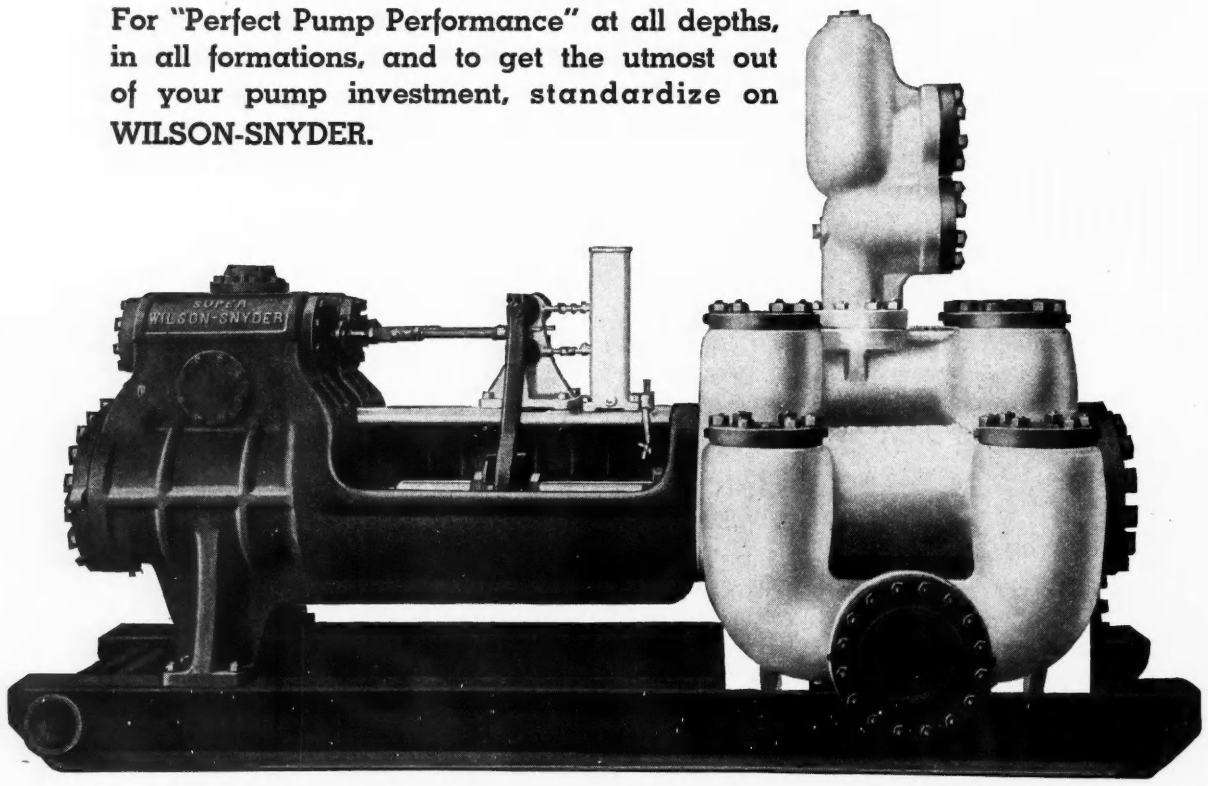
Better Design
Greater Power
Stronger Construction

AND MORE, *too*

In addition to the above, Wilson-Snyder Pumps have other money-saving advantages, such as:

Di Hard Liners
Hi Hard Piston Rods
Reversible Valves
Side and End Suction

For "Perfect Pump Performance" at all depths, in all formations, and to get the utmost out of your pump investment, standardize on WILSON-SNYDER.



Wilson-Snyder Pumps are sold exclusively on the Gulf Coast by

WILSON SUPPLY CO.

1412 MAURY ST.

OIL & GAS WELL SUPPLIES

HOUSTON, TEXAS

EXCLUSIVE GULF COAST DISTRIBUTORS FOR: Wilson-Snyder Pumps; American Cable Tru-Lay Pre-formed Wire Rope; Kewanee Boilers; Sievers Reamers; Drift Meter, Jr.; Gray Swivel; Nixon Surface Control Gas Lift; Nixon True-Taper Slip and Spider; Bowen Pack-Off and Releasing Drill Pipe Overshot; Douglas Weight Indicator.

Complete line of
Fishing Tools and Service

BRANCH STORES:
TEXAS: Gladewater; Barbers Hill; Bay City; Alice; Victoria; Corpus Christi; Benavides.
LOUISIANA: Rodessa; Lake Charles; New Iberia; Gretna.
ARKANSAS: Magnolia.
SALES OFFICES — Tulsa, Oklahoma; Dallas, Texas; Shreveport, Louisiana.

THE WEEK'S NEWS SUMMARIZED

Courts

The Texas Railroad Commission's method of proration in the East Texas field is invalid and void! That was the important decision handed down last week by a federal court. The ruling, which was not upon the validity of the order but only on the method of application, declared it was confiscatory because of being based purely on a per well basis which failed to give proper consideration to acreage and oil in place. The commission was condemned for its laxity in enforcing spacing rules, which the court declared primary cause of the present troubles.

The possible influence of such a far-reaching decision was the subject of much comment last week. The immmediate effect when and if enforced would be to give wider spaced wells in the field higher daily allowables, but the eventual influence would be the eventual ownership of perhaps 100,000,000 barrels of oil. A very nominal change in proration methods might cause a shift in the ownership of a great volume of oil.

Department of Justice officials last week disclosed they were determined to suppress objectionable practices in the oil industry. No civil cases will be halted by consent decrees, unless the industry unconditionally surrenders.

Legislation

Extension of the Interstate Oil Compact until September 1, 1941, was recommended to Congress on June 15 by President Roosevelt. A brief message disclosed that the governors of Oklahoma, New Mexico, Colorado, Texas and Michigan had deposited a signed certified copy of the agreement to extend the compact.

Extension of the Connally hot oil act was recommended in a House committee report last week, which stated "past experience presents very definite reasons for the government to cooperate to the extent provided in this legislation." The report, however, did not favor making the law permanent until more of the states had passed permanent conservation statutes, and provided for only a three-year extension. The committee also eliminated a Senate provision extending the criminal penalties of the law.

The House has agreed to take up the question of extending the Connally hot oil law on June 20. It is expected to be passed without difficulty as recommended by the committee, which would require it going back to the Senate, as the latter voted for permanent enactment.

Federal taxes on oil and refined products, which expire shortly, are expected to be renewed. A measure providing for this action was introduced last week.

By a vote of 44 to 28, California's House passed and sent to the Senate a bill that would set up a state controlled commission to regulate crude production in California.

The Illinois Senate approved a bill requiring that crude oil purchasers take 100 percent of the offerings from 14,000 stripper wells in the state before buying oil from wells in new pools. Meanwhile, the House passed a bill authorizing extension of the state's membership in the Interstate Oil Compact.

Legislation asserting federal title to California off-shore oil lands has little chance of enactment this year. Despite strong efforts of the administration, it is expected to stay pigeonholed in both House and Senate committees until next year.

Allowables

Members of the Texas Railroad Commission were divided last week as to the form the next statewide proration order should take. However, it appeared that the order would cover a 90-day period, as two of the three members favored this stand. It was expected that the order would provide for both Saturday and Sunday shutdowns.

Statistics

Crude runs to stills rose 95,000 barrels to an all-time peak of 3,510,000 barrels daily, and caused gasoline production to climb 52,000 barrels per day. Despite the large gasoline production, however, the output was absorbed and nearly a million additional withdrawn from storage.

Crude production was curtailed sharply from a week previous, and crude stocks dropped about a half million barrels.

Prices

A one-half cent advance in gasoline tank wagon prices throughout most of the United States gained general support.

News Section Index

General News 41-52

Oil in the Courts..... 42
Allowable Picture 46
Oil at the Capitols..... 47
Market Situation 48
Crude Oil Production..... 50
Pennsylvania Meeting 51
Pipe Line News..... 52

World Developments 36

Field Development News..... 53-74

Arkansas 68
California 72
Eastern States 58
Illinois 56
Indiana 58
Kansas 55
Kentucky 57
Louisiana Coast 65
North Louisiana 68
Michigan 70
Mountain States..... 71
New Mexico 70
Oklahoma 54
East Texas 61
Texas Gulf Coast..... 64
North Texas 59
Panhandle Texas 59
Southwest Texas..... 62
West Texas..... 60
Wildcat Development Report 73

Oil in the Courts

Voiding of East Texas proration method, because acreage and oil in place not considered, places many millions of barrels of future oil at stake

Acreage held factor in equitable proration

In a most important decision, the East Texas proration order, as applied by the Texas Railroad Commission, was held invalid and void in a ruling handed down last week at Austin by Federal Judge R. J. McMillan in the Rowan and Nichols suit.

The order was declared void and invalid on the grounds that by being based purely on a per well basis it was confiscatory because it thereby failed to give sufficient consideration to acreage and to the difference between the best and worst wells in the field, whereas the Texas law is that the oil in place belongs to the leaseholder.

Field Proration Not Lifted

Judge McMillan made it clear that he was not ruling on the validity of the order as written but only upon the method of application by the commission, and that he was not lifting proration in East Texas as the decision applied only to the Rowan and Nichols property involved in the suit. Furthermore, in granting the plaintiffs an injunction against the railroad commission, the judgment permits Rowan and Nichols to produce daily only in the ratio of "220 barrels bears to 522,000 barrels." The latter figure is the top allowable for the East Texas field on a seven-day basis, and the company's allowable is expected to fluctuate in that proportion. It will be reduced to some extent by the Saturday and Sunday shutdown orders which reduce the daily average allowable of the field.

Condemns Per Well Basis

In the lengthy decision, Judge McMillan pointed out that the proration of this field on a per well basis has been considered and condemned in a number of previous cases, and asserted the difficulty in which the commission finds itself grows largely out of its relaxation of its own spacing rules. Moreover, it was declared there was no reason why many of the small wells in the field should not be cut back to a position more nearly approaching their productive capacity and reserve. In speaking of the marginal well law, which prohibits the artificial curtailment of pumping wells in the East Texas field below 20 barrels daily, the court stated the statute was obviously designed to keep these small wells from being slighted, but that better wells were expected to receive higher allowables.

The court declined to enter an appeal for a stay order presented by Assistant Attorney General James Hart as the state notified the court it would appeal the decision. Hart sought to maintain the status quo pending final decision.

The charge filed by Rowan and Nichols last September charged that proration regulations in the East Texas field were creating inequitable recoveries because they did not take into consideration a number of engineering principles (such as well density, acreage; porosity, thickness and permeability of the sand).

The case grew out of a Rule 37 spacing case, wherein an operator obtained a well on one-tenth of an acre offsetting Rowan and Nichols' 25-acre R. M. Wood lease, on which there are 5 wells. The specific charge was that the owner of this small tract was permitted to produce as much as Rowan and Nichols were allowed from any of its five wells, and therefore Rowan and Nichols would not recover its just share of the oil underlying its lease.

Operators ponder effect of Rowan-Nichols ruling

The Rowan and Nichols court decision, requiring acreage and oil in place (see preceding story) be considered in East Texas proration orders, was causing endless controversy among operators last week, many of whom would be affected by such a change in curtailment methods.

While the final effect of the decision, should it be upheld by higher courts to

Court Decision in East

The decision of Federal Judge R. J. McMillan in the Rowan and Nichols suit attacking the method of prorating East Texas wells is abridged below:

"Article 6029 of the Revised Civil Statutes of Texas directs the Commission generally to make and enforce orders for the conservation of crude petroleum oil to prevent the waste thereof.

"Article 6049c provides that . . . 'the Commission shall distribute, prorate, or otherwise apportion or allocate, the allowable production among the various producers on a reasonable basis.'

"The order of August 29th, 1938, in so far as it applied to the East Texas field, after fixing a top allowable of not to exceed 450,000 barrels a day as desirable, proceeded as follows:

"'Rule 23 (A). THEREFORE IT IS FURTHER ORDERED By the Railroad Commission of Texas that during each twenty-four (24) hour period . . . . each well in the EAST TEXAS FIELD shall be permitted . . . to produce a maximum of 2.32 percent of its hourly potential capacity as determined by the Commission.'

"By subsequent orders, shutdowns for two days a week have been put in effect . . . . The method of application and enforcement of this order by the Commission is very different from the actual wording of the order itself. . . . The Commission's interpretation, application and enforcement of this order is substantially as follows: A top allowable for the days during which the wells were allowed to produce of 522,500 barrels was fixed. Each well in the field that could not produce as much as 20 barrels per day was allowed to make all it could produce. Where the figure of 2.32 percent of the hourly potential of any well amounted to less than 20 barrels a day, that figure was disregarded and the well was allowed to produce 20 barrels a day. Where the figure of 2.32 percent would amount to more than 20 barrels per day, the well was allowed to produce on that basis. This application of the order resulted in the following: Approximately 451 wells, not any one of which was capable of producing as much as 20 barrels per day, were allowed to produce daily a total of approximately 5,250 barrels. Approximately 19,032 wells whose individual hourly potential when multiplied by 2.32 percent amounted to less than 20 barrels, were each allowed to produce a full 20 barrels per day; or from all of such wells a total of approximately 380,640 barrels per day. These were wells whose hourly potential ranged anywhere from 1 barrel to 860 barrels per hour. Approximately 6,325 wells whose individual potential when multiplied by 2.32 percent amounted to more than 20 barrels were each allowed to produce daily that number of barrels which equalled the product of its hourly potential multiplied by 2.32 percent. The total daily production from these wells was approximately 136,610 barrels. These wells had an hourly potential ranging from 865 barrels per hour to about 1,100 barrels per hour. In practical operation, the daily allowable of no well was controlled by the factor 2.32 percent of its hourly potential unless such well had a potential of 865 barrels or more per hour.

" . . . . Accordingly, the question of the validity of the actual order itself is not controlling, for as said by the Supreme Court in the Greene case, 244 U. S. 507:

"'A valid law may be wrongfully administered by officers of the State, and so as to make such administration an illegal burden and exaction upon the individual.'

"Therefore, the matter to be considered here is not the validity of the order as written but as construed and enforced by the Commission.

"Complainant, in its brief, makes it clear that it does not attempt to attack the validity of the conservation statutes; that it does not now directly attack the top allowable fixed for the field; and further that it does not attack the spacing rule, generally called Rule 37. The gravamen of its complaint lies in its assertion, forcibly presented, that the Commission does not allocate the allowed production among the various producers "on a reasonable basis. . . .

"Respondents, on their part, set up generally the characteristics of the East Texas field, the necessity for regulation, proration and so forth. They then assert that owing to the number of wells in the field and the conditions there existing, the present order is practically the only one that can be feasibly worked out. . . . .

"Complainant has a lease of something over twenty-four acres and on this lease it has five wells. All of the wells are producers and, according to the Commission's potentials, they are capable of producing in excess of 865 barrels per hour. Under the order as applied, these wells are allowed to produce a fraction over 22 barrels a day for five days a week. The field is approximately forty miles long and has an average width of about four miles. There are about 26,000 oil wells in the field. Of these, all save approximately 25 are producers. There are some wells which are capable of producing only 6 or 7 barrels a day and some wells that will produce over 25,000 barrels a day. Between those figures there is a wide spread in potentials. Complainant's wells, according to the Commission's figures, will produce on open flow over 20,000 barrels a day. But the actual result of production on open flow, of course, is not known and any such production would in all probability immediately result in a lessening of potentials. However, the figures as computed indicate the relative capacity of the various wells, according to the Commission's notion. Complainant attacks the method of obtaining these potentials but it is unnecessary to pass on that matter to decide this case. It can and should be determined on broader issues. The wells are located upon tracts of various sizes. Constant exceptions to the spacing rules have resulted in great density in drilling. In many instances, there are wells on a fraction of an acre. In complainant's case, there is an average of one well to about five acres. The structure and formation of the field varies.

which it is to be appealed, could not be guessed, there apparently was little reason to expect any immediate change in conditions. Members of the Texas Railroad Commission announced they would not amend the voided order until the question had been decided upon by the highest court. A number of operators who have long advocated a different basis of proration in East Texas indicated they had no present intention of asking for similar injunctions, preferring to await the final ruling and to give the commission a chance to rewrite the order. However, some concerns may decide to seek court injunctions that would grant them similarly higher allowables given to Rowan and Nichols by Judge McMillan, and a sufficient number of these, if obtained, would be far reaching at once.

The eventual ownership or recovery of perhaps 100,000,000 barrels or more of the recoverable oil due from the Woodbine horizon in the East Texas field is the stake involved.

If the decision is sustained and finally enforced, the immediate effect from adopting an acreage factor for apportioning production allowables between leases would be to penalize the per well daily output of densely drilled properties, and cause a corresponding increase in the daily yield from wells on wider spacing.

However, the eventual influence would be much farther reaching and is highly controversial. Large amounts of ultimate recovery will be shifted between leases, but just who will win and who will lose would depend not only on well density and daily output, but upon such factors as structural position, water encroachment and behavior of bottom-hole pressures under unequal withdrawals from wells on adjoining leases.

The East Texas field has produced about 1,370,000,000 barrels of oil, including the estimated volume of illicit output, to June 1, 1939. Estimates on the volume of remaining recoverable oil vary from 1,880,000,000 barrels to 2,630,000,000 barrels. In view of this enormous reserve a nominal change in the method of apportioning proration allowables would shift the ownership of a great volume of oil.

The court's decision was handed down just as the Texas monthly statewide proration hearing for July commenced a short distance away. Consequently, practically everything else was shelved as attention turned toward the decision. Attorneys for oil men and members of the commission sought, at the hearing, to interpret the decision, and to work out some plan of proration for the field that would meet the court's approval.

Hines Baker, Humble Oil & Refining Company attorney, appeared to express the general sentiment of the operators. He declined to condemn the railroad commission, because a policy which it had followed in granting a large number of wells, might have been a serious factor in bringing about the conditions which resulted in the Rowan and Nichols suit.

"We are faced with a condition," Baker said, "regardless of the causes for it. We must find a solution to the problem.

"Obviously, the answer is not to drill

Texas Proration Suit

Toward the west, water is encroaching. Toward the east, the producing sand pinches out. There is apparently a well defined drainage in an easterly direction. Complainant's lease is conceded to be one of the most favorably situated in the field. It is on what is known as the "Fairway." It has one of the thickest of the producing sand formations. It is well located on the structure and is highly desirable from the standpoint of permeability and porosity. It has so far encountered no water trouble. Complainant can produce without difficulty the oil lying under its land with the five wells which it has at this time. It has from time to time complained to the Commission with regard to its allowable without result. On one occasion, conceiving that the present scheme constituted nothing more than a per well basis of allocation, it applied for permit to drill a large number of additional wells. This application was generally denied, but a permit was given for one additional well, which has not been drilled.

. . . . . .

"The respondents' engineers frankly admitted that the present scheme of proration is nothing more or less than one on a per well basis . . . . Complainant's wells, which are admitted to be among the highest producers in the field. are given under this arrangement the pittance of about 2 barrels a day over other wells which admittedly could not make a fractional part of the production that complainant's wells can make.

"The proration of this field on a per well basis has been considered and condemned in a number of cases before this. . . . . It is sufficient to say that it takes no account of the difference in the wells, of the richness or thickness of the sand, of the location upon the structure, of the porosity or permeability of the sand, of the estimated oil reserves, or of the acreage upon which the respective wells are situated. The worst property is raised to the level of the best and the best is lowered to the level of the worst.

"The disregard of acreage alone should be sufficient to condemn the plan. Here we have a case where a producer with a well to five acres can produce no more than his neighbor who adjoins him with a well on a fraction of an acre. Under the law in Texas, this oil in place belongs to the owner of the land or the leasehold.

. . . . . .

"It is manifest that other things being equal, the party with the largest acreage has the most oil. There is nothing in this order however that protects him in that ownership. If a trust fund in which various parties owned different amounts of money was to be distributed, the natural assumption would be that the distribution would be on a prorata basis. If one man had $100 and another $1,000 the man with the $1,000 would get $10 for every $1 the other man got. However, suppose for some reason it was determined that either the welfare of the fund or the community dictated that each person should draw $20 per day from the fund. When the man who had $100 in the fund had drawn for five days, he would stop. The man who had $1,000 would continue to draw his $20 a day for another forty-five days.

. . . . . .

"To these matters the Commission responds that the situation in the East Texas field is difficult and no better order can be prepared. It is, of course, not the duty of the court to write a better order, nor does the obligation rest upon complainant to suggest one. The fact that regulation is difficult does not justify confiscation. . . . .

"Respondents say that if small wells are not allowed to produce sufficiently to make them profitable they will be abandoned and there will be an economic loss. The number of these small wells is, in the opinion of the court, negligible. Furthermore, the evidence is not at all conclusive that any substantial reserves lying around these wells will be ultimately lost. Moreover, the evidence indicates that the production of these wells with the large amount of water that is brought up with the oil is even more harmful and wasteful to the field than the abandonment of those wells themselves would be. . . . . The Commission's engineer Cottingham frankly admitted that the present order operates unequally as to complainant, but asserted his opinion that a long period of years would equalize the matter. The question as to whether it will or not is highly problematical. The matter of present day confiscation is certain. Respondents are not entitled to require complainant to gamble as to what will happen to its oil or its markets over a period of twenty-five or thirty years.

"Furthermore, the court is not of the opinion that the evidence bears the respondents out in the contention that the present order is the only one possible. . . . . It is manifest from all of the evidence that the allowable has been fixed with an eye to the market as well as with an eye to the prevention of waste. Complainant does not attack the idea of a top allowable. That, however, does not preclude the court from considering the matter in contemplating the reasonableness of this entire plan of proration. Furthermore, it is evident from the record that it is not necessary to allow all of these wells 20 barrels per producing day in order for them to operate. An allowable of 20 barrels is an arbitrary figure. There was no evidence to show that they could not survive on less. . . . . There is no reason why many of these wells should not be cut back to a position more nearly approaching their productive capacity and reserve.

"The difficulty in which the Commission finds itself grows largely out of its relaxation of its own spacing rules. The drilling of thousands of wells, unnecessary so far as the public interest is concerned, has required them to listen to the demands of those well owners at the expense of other operators better situated. No effort has apparently been made to require those parties producing upon too densely drilled acreage to pool their tracts. . . . .

"Respondents, in an effort to extenuate the inequality of their order, suggest the difficulty presented by the marginal well law. . . . This act relates to pumping wells and so far as East Texas is concerned forbids the artificial curtailment of production below 20 barrels a day if such reduction would cause damage to the wells, or loss of ultimate recovery, or premature abandonment. Their position with regard to this matter is equivocal. There are about four hundred fifty of these pumpers in the field. If, as suggested, the law applies to them, then the order of August 29th, 1938, made no effort to comply with the law for the 2.32 percent of hourly potentials would never give these wells 20 barrels a day. Their interpretation and enforcement of the order does not do it for the two day a week shutdown cuts a 20 barrel a day allowable to about 14 barrels. All of these pumpers put together do not produce on an average over 5,500 barrels a day. Any one of complainant's wells at half its potential open flow would produce more than that.

"Accordingly, it is apparent that the effect of the so-called statutory marginal wells is very slight so far as the general scheme of proration for that field is concerned. The statute offers no excuse for a flat 20 barrel allowance to other wells running up to 860 barrels per hour.

"If it be conceded that the statute is valid (which has been seriously questioned) and that these strictly marginal wells must be allowed 20 barrels a day if they can make it, still that furnishes no excuse for confiscating the property of some other producer better situated. Pumping wells of this variety might appear in a field to such an extent as to exhaust the entire allowable, thereby leaving nothing for high potential flowing wells. No such absurd result was ever intended. This statute was obviously designed to keep these small pumpers from being slighted off, it being contemplated that the better wells would have a much higher allowable. If however, this marginal minimum must be considered as a component element of a proration scheme, thereby unreasonably reducing the allowables of those other better wells, either the statute or the scheme must fail.

. . . . . .

"The continual increase in drilling has operated to make this system of proration progressively more oppressive until the present administration of the order has in effect put the field upon a per well basis. The potential factors of the order have practically become nil. Furthermore the record shows that the complainant has constantly protested to the Commission with regard to enforcement of the order, without result. It has attempted to relieve itself by applying for permits to drill additional wells, however unnecessary they might be in the production of its property. Further than that, the matter involved here now is one of confiscation. The orders have been submitted to under the threat of penalties. The right to assert complainant's constitutional rights has not been lost.

"The Court is not attempting here to pass upon the order generally or upon the rights of anyone with reference to it save those of complaint. In so far as complainant is concerned, the court is of the opinion upon the evidence and the law that the order as applied and enforced is confiscatory and void. The complainant has not, however, prayed the court for a sweeping writ allowing it to produce its wells without restriction. It only asks for what it considers its fair share of the allowable as now fixed for the field. It is the opinion of the court that it is entitled to such an injunction restraining the respondents from interfering with it in so producing its property."

down to the density of the most densely drilled tract. The railroad commission need not issue a perfect order."

It appeared Baker meant that the commission might issue a "reasonable" order without attempting to divide exactly the barrels of oil in place in East Texas.

"The marginal well law must be considered," he said. "That statute defines as marginal those pumping wells incapable of producing (in proportion to their depth) a minimum amount of oil averaged over a 30-day period. For East Texas this minimum is 20 barrels. We must likewise maintain the top allowable as a waste prevention measure," he said, and then outlined the following plan:

"The commission might assign to marginal wells, as I have defined them, that amount of oil which they are capable of producing. The total would then be subtracted from the top allowable and the balance prorated among the marginal wells."

"A minimum of eight, ten or twelve barrels could be fixed for all non-marginal wells and this total subtracted from the proratable oil. The remainder of the proratable oil could then be assigned to the remaining wells in the field, according to some formula which would take into consideration such factors as pressure, sand thickness and acreage."

The proposal that the commission establish a minimum allowance immediately raised the question as to standards by which this minimum would be determined. Should the commission fix a minimum for wells on the basis of the time it takes to pay out in East Texas? If this policy is followed, whose lifting costs should be taken as a standard? Should the commission consider interest in arriving at a pay-out, and if interest is considered, what rate should be assumed?

Answers to these questions were not satisfactory and in most instances were so vague as to be meaningless. They are important, however, because they show the trend of thought in the minds of operators and disclose some of the questions which the railroad commission will be required to answer if the Rowan and Nichols decision stands.

R. E. Hardwicke, Fort Worth attorney, declared that the rialroad commission had the power to fix one basis of allocation for wells now producing in the field, and to use a different standard thereafter for other wells.

Hardwicke declared also that the commission could require pooling of small tracts with larger leases and thus prevent the drilling of "unnecessary" wells.

West Edge Rights

The question was also raised as to the rights of parties producing in the field who have west edge wells, which will be depleted sooner because of the encroachment of water from that side of the field. It was suggested that they might be entitled to higher allowances than would be granted to wells in the center and on the east side of the field.

"The commission might do well to take as long in writing its order as did the court in arriving at a decision in this case," said Jack Blalock, Houston attorney. He recommended that the commission write no order until hearings had been held and the evidence developed fully. He suggested that the commission had no evidence to show what was a "reasonable" decline in pressure for wells in the East Texas field.

"All the testimony so far," he said, "has merely shown that a decline has occurred."

The suggestion was made that the commission attempt limiting production to market demand and that hereafter production be on physical waste alone for all fields. The argument was advanced that higher production now might mean a price break, but that this cut would be smaller than would occur if drilling continues as it has and available sources of supply continue to increase. The advocates of this program contended that by opening up there would be a material reduction in the number of new wells drilled because it would be less profitable to drill them.

For the first time, the new East Texas Oil Association appeared at a statewide hearing. Leslie Neill, attorney for the group, did not endorse the plan of opening up Texas fields, but urged the commission to maintain the 20-barrel minimum allowable for East Texas wells.

Commission engineers testified that the average bottom-hole pressure has declined 15.71 pounds for the 2 months ending June 8. There was a drop of 13.26 pounds to 1,087.53 pounds between April 8 and May 8. During this period, the allowable averaged 418,831 barrels daily and the pressure dropped at the rate of 1.058 pounds a million barrels of allowable oil.

During the succeeding month there was a drop of 2.45 pounds in pressure and the allowable averaged 421,321 barrels, a decline of .187 pound per million barrels of allowable oil.

For the 2 months period, the allowable totaled 25,595,242 barrels and the average pressure declined at the rate of .614 pound per million barrels of allowable oil.

The results of these calculations led Dr. F. V. L. Patten, chief petroleum engineer for the commission, to recommend that the shut-downs be continued, because they will reduce production to an average of 389,000 barrels approximately, and thus arrest the pressure decline, in his opinion. He recommended that the field be closed in at least 8 of the 10 Saturadays and Sundays during July.

R. H. Foster of Landreth Production Company urged the commission to close down on Saturdays and Sundays in July, August and September, and suggested that it might be well to close on Friday also, if necessary to keep production within demand. Asked how far he would go with such a program, Foster said he favored closing Texas oil fields entirely for 90 days.

Majors have fewer wells per acre in East Texas

Comparatively few of the 1015 separate operating units in the East Texas field, who have 3660 producing leases, have not resorted to close spacing on some of their properties. However, the owners of the larger tracts have adhered generally to a more reasonable well density. Vacancy tracts, townsite at New London, Kilgore and Gladewater, and leases along the banks of the Sabine River have the greatest well density. But major companies have not been as aggressive in drilling operations as have the independent firms.

Currently the field has 26,029 wells distributed over its defined area of 133,400 acres, or an average of one well to 5.13 acres. Fully proved oil leases vary in size from 914.51 acres to a fraction of a townlot. The field extends along a northeast-southwest course for a distance of 42.84 miles, with a maximum width of 9¾ miles.

Fourteen of the major firms control 79,867 acres of the oil producing area, or 59.87 percent of the total. This group has an average of one well to each 5.82 acres. Independents control 53,533 acres, or 40.13 percent of the field, and at present have a well density of 4.35 acres a well. Shell Oil Company, seventh largest acreage owner and producer, has almost succeeded in matching the density held by the independent group by drilling one well to 4.58 acres. However, most of the company's closely spaced leases were acquired recently from independent interests.

Probably the most densely drilled tract is one near London that has 15 wells on 3.33 acres.

Majors have been carrying on more

Major Company and Independent Well Density in East Texas

Company	Productive Acres	Total Wells	Average Acres per Well	Approx. Daily Allowable	Percent of Total Acreage	Percent Total Wells
Humble Oil & Refining Co.	14,656	2545	5.76	36,521	10.99	9.78
Gulf Oil Corporation	8,790	1438	6.11	20,635	6.59	5.52
Stanolind Oil & Gas Co., et al	7,140	1221	5.85	17,521	5.35	4.69
Magnolia Petroleum Company	7,082	1299	5.45	18,641	5.31	4.99
Atlantic Refining Company	7,022	1390	5.05	19,947	5.26	5.34
Sinclair Prairie Oil Company	6,783	1039	6.53	14,910	5.08	3.99
Sun Oil Company	5,950	914	6.51	13,116	4.46	3.51
Ohio Oil Company	4,987	633	7.88	9,084	3.75	2.43
Tide Water Associated Oil Co.	4,915	908	5.41	13,030	3.68	3.49
Shell Oil Company, Inc.	4,508	984	4.58	14,120	3.38	3.78
The Texas Company	3,341	490	6.82	7,032	2.50	1.88
Arkansas Fuel Oil Company	3,023	549	5.51	7,878	2.27	2.12
Cities Serivce Oil Company	1,331	256	5.20	3,673	1.00	.98
Continental Oil Company	339	49	6.92	702	.25	.19
Total for Fourteen Majors	79,867	13,715	5.82	196,810	59.87	52.69
Miscellaneous Operators	53,533	12,314	4.35	176,706	40.13	47.31
Field Totals	133,400	26,029	5.13	*373,516	100.00	100.00

* Current daily average, considering Saturday and Sunday shut-downs, and 935 barrels to be deducted from total for accounted for dead wells.

development than the independents this year, apparently in an effort to equalize oil withdrawals with adjacent densely drilled tracts. In some instances, major concerns have closely drilled their acreage, one 44.6-acre lease near Kilgore having 21 producers. However, the major group would be required to drill 4645 additional wells to equalize density with independents, which probably would cost $46,000,000, while in March, 1939, they were 4740 wells short of an equal standing.

The incentive to crowd the maximum number of wells on a property followed the adoption of the well potential method of proportioning allowables in East Texas. The plan has been in effect since April 24, 1933, when 9913 wells were prorated to 15 percent of their hourly flow, determined by open flow gauges of key wells distributed at intervals over the 133,400 producing acres. The proration factor was reduced by states to 2.32 percent effective June 21, 1936. This factor has remained unchanged for two years.

Government out for blood in anti-trust prosecutions

Department of Justice officials this week were disclosed to be determined to suppress objectionable practices in the oil industry, one of the two industries regarding which there have been most complaints over a period of years.

No civil cases brought against the major oil companies will be halted by consent decrees providing anything less than "unconditional surrender" on the part of the industry.

Efforts of Secretary of Commerce Harry Hopkins to act as intermediary between the industry and the government's prosecuting agency have been futile, and it is said, have been abandoned.

The oil industry was the first of three to be called in by Secretary Hopkins, but sources close to the Department of Commerce said there was no "meeting of minds" and no basis for a presentation to the Department of Justice could be reached.

The oil company officials, it was reported, would like to have the Secretary tell Attorney General Frank Murphy that what they have been doing is sound from an economic standpoint. Tentative overtures along that line were flatly rejected, the oil men left Washington, possibly to return at "some future date," and the Department of Justice went ahead with its California case.

Since then, Secretary Hopkins has called in representatives of the potash and motion picture industries, both involved in anti-trust suits, but is said to have been informed that the film situation is on all four with that in oil and that no consent decree offering less than the government is seeking in its litigation will be considered.

It was made clear at the Department of Justice this week that if Secretary Hopkins works out a plan to act as intermediary for industries under fire, it will in no sense involve any relaxation of the administration's anti-trust policy but merely a mechanism by which industries can save the time and money involved in lengthy suits and the "triple damage" cases which can follow a court decision. To secure this saving, however, they must acquiesce in everything the government demands in its complaints.

In no case, however, it was made clear, will the Department of Justice consider a compromise in a criminal proceeding.

Kansas proration attacked in federal court suit

The Kansas Corporation Commission last week filed a motion in federal district court at Wichita asking Federal Judge Richard J. Hopkins to modify his ruling of June 8 ordering the commission to withhold enforcement of its June allowables on 2 oil wells in the Campbell pool of Rice County.

"There is reason to believe that the Kansas State Corporation Commission may have exceeded its rights and authority in determining and fixing allowable production and sale of oil, insofar as said allowable production pertains to the month of June and for each succeeding month," said Judge Hopkins in his order. He directed Jesse D. Wall, Wichita attorney and receiver for Skiles & Hinerman, Hutchinson oil firm owning the two wells in question, to prosecute proceedings for a review of the ruling.

Wall had petitioned the court for the restraining order and permission to prosecute for a review of the commission's ruling. He declared that the 2 wells, having potentials of 252 and 906 barrels a day respectively, and 9 others in the pool have a market for 2000 barrels of oil daily. The state commission had first allowed the 2 wells to produce about 7000 barrels of oil a month and agreed that there was little waste. In June, however, this allowable was cut to a little more than 4000 barrels a month.

The receiver challenged the validity of the ruling and constitutionality of the state's proration laws. The ruling, he declared, was "contrary to law" and to the constitutional rights of lease owners.

In its request for modification of the order, the commission charged the court was without jurisdiction "of parties and of the subject matter" in the case. Wall, the commission's petition stated, had "adequate remedy at law" with respect to the commission's order, and it was charged that the court's order "is of a legislative nature and is a restraint upon the police power of the state."

Abandon prosecution in Cotton Valley proration case

Two charges against Premier Refining Company and Longwood Oil and Gas Company, involving alleged violation of the Louisiana Conservation Commission's regulations in the Cotton Valley field were dropped in a nolle prosequi action filed in Webster Parish District Court at Minden last week before Judge J. F. McInnis.

An indictment charging excess of the regular allowable in the Cotton Valley field had been returned by the Webster Parish grand jury against the companies named, following filing of complaints by royalty owners of nearby acreage. The complaining royalty owners agreed to dropping the charges against the companies after the two companies agreed not to accept any special permission from the Louisiana Conservation Commission to exceed regularly set allowables for the Cotton Valley field, unless public hearing is held on such action.

In a statement issued by the defendant companies after their indictment they contended they had been given special permission by the Louisiana Conservation Commission to take more oil from their wells at Cotton Valley than the regular per-well allowable order called for.

Leases acquired under relinquishment upheld

The Texas Supreme Court has ruled that an oil company lessee which has paid to the state cash bonuses on leases to lands acquired under the relinquishment act, has the right to recover from the landholder. The decision supported an earlier ruling by the Court of Civil Appeals in the case of H. P. Allison, et al, and the court said in part as follows:

"The facts of this case bring it directly under the rules of law announced in Shell Petroleum Corp. vs. Tippett (Tex. Civ. App., writ refused) 103 S. W. (2d) 449. By refusing the writ of error in the Tippett case, we approved the opinion. Also, we here and now approve such opinion in its entirety.

"These leases are in legal effect the same as the leases in the Tippett case, supra, except these leases each contain the following clause:

"Counsel for lessors, who are plaintiffs in error here, contend that the above-quoted provision contained in these leases has effect to make the rules of law announced in the Tippett case, supra, inapplicable to this case. To our minds, the above-quoted provision can be given no such effect. An examination of these leases, and of this record, shows that the only bonuses involved in the two transactions were the cash bonuses provided in the leases, and paid at the very time they were delivered. The clause under discussion, in effect, expressly allowed the lessee to deduct from such bonuses any amount thereof 'which may be required to be paid to the State of Texas . . . ' The very language itself plainly demonstrates the contractual purpose or intent to place the primary or ultimate liability on the lessor for the amount of such bonuses that might be required to be paid to the state. It is true that the lessees made no deductions from the bonuses at the time the leases were delivered. The reason for this was that it was not then known what such deductions ought to be, or whether or not there should be any."

Illinois high court refuses to advance directional suit

The Texas Company last week was refused its request for an advanced hearing by the Illinois supreme court of its suit for a subsurface directional survey of 9 wells drilled in the Lake Centralia-Salem pool of Marion County. The appeal was taken after the Marion County Circuit Court refused to order the survey.

The high court declared the suit would be considered in "regular order" as it had not been filed in time for the present session. The Texas Company contends that 9 wells drilled on a narrow strip of land in the midst of its holdings had been bottomed under its leases and were draining its oil.

Allowable Pictures

Texas commissioners are divided over form next order should take . . . Michigan's first proration orders are generally satisfactory to the industry

Ninety day Texas order is generally expected

Members of the Texas Railroad Commission were divided last week as to the form the next statewide proration order, to become effective July 1, should take.

However, it appeared that the order would be issued June 19 and that it would cover a period of three months and provide for closing all oil fields on each Saturday and Sunday, as Lon A. Smith, chairman, announced he favored this plan and Ernest O. Thompson indorsed the program.

Commissioner Jerry Sadler immediately took issue with the proposed 90-day order, and announced he would not sign an order for a period longer than 30 days.

"The only proration order which I will sign and support is one for 30 days," Sadler said. "I will not place my name on one which attempts to prorate for 90 days. Such an order would place this state's oil market at the mercy of the major companies, and it would also lead to the nation's other oil producing states grabbing markets which are rightfully ours and which Texas producers have supplied for years.

"In short, a 90-day order would mean outright confiscation of Texas production and markets," he concluded.

The commission has decided not to revise its method of allocation in the East Texas field until final decision in the Rowan and Nichols case has been handed down. The decision (see story page 42 this issue) declared the present order invalid because it did not consider acreage and oil in place.

Virtually all of the Texas statewide proration hearing, held in Austin June 12, was devoted to a discussion of the Rowan and Nichols court decision (see story page 42 this issue).

The commission estimated that the daily average allowable of the state on June 12 was 1,330,282 barrels after considering shut-down deductions and exemption additions. This was 97,018 barrels under the Bureau of Mines estimate of Texas consumer demand. An accompanying table sets out the basic allowables by districts during recent periods, and explains the June 12 allowable in detail.

During the course of the hearing, operators asked for small increases in several fields, including a 5000-barrel increase for the Panhandle area.

North Texas operators reported that there were still 270 wells in that territory without connections.

Danciger Oil & Refining Company asked that arrangements be made to take care of 30 connections in the East Texas field, which are to be relinguished by Humble Oil & Refining Company on July 1.

Oklahoma hearing will consider potential methods

Rules and regulations for taking potentials in Class C pools of Oklahoma for the August, 1939, period will be announced after a hearing before the Oklahoma Corporation Commission in Oklahoma City June 23. South Britton, Fitts, Langston, North Lucien and East Sasakwa (Wilcox) are the pools to be considered.

Pools of this classification are required to take potentials in January and July of each year.

The Oklahoma Corporation Commission has issued an order to require 10-acre spacing for the extension of the Shawnee pool, Pottawatomie County. Application was made by the Yorkan Production Company, Inc. The order applies to the Earlsboro sand.

Michigan's first proration rules fairly satisfactory

First rules and proration orders issued under Michigan's new oil conservation act were received by the industry at large as satisfactory but not without opposition from some quarters —in particular the refiners.

The first proration order established a 200-barrel-per-well maximum daily take for 5 areas in Southwestern Michigan and a 125-barrel maximum on 10-acre locations in the Temple field, Clare County, with a 250-barrel allowable on 20-acre locations.

Protests were raised in the June 5 hearing that J. P. Hoffmaster, supervisor of wells, and the 6-man advisory board, had failed to take into consideration market demand and had failed to make proper investigation of individual field conditions before fixing the 200-barrel flat allowable. Refinery spokesman claimed that the allowable would force them to cancel contracts built during the spring months and might open the gate for Illinois production on markets now supplied by Michigan fields.

Hoffmaster and Harold M. McClure, chairman of the advisory board, admitted that they had made no so-called scientific investigation but backed up their order on the grounds of general conditions "current and past. We know that old production methods in many Michigan fields comparable to the ones under order now were damaged by methods used in producing them," Hoffmaster said. "If investigation and surveys which we will make show that the 200-barrel order can be revised and prevent waste, the orders will be changed. Until then they stand."

Only minor changes were written into the general orders on spacing, tubing requirements, prevention of fire, disposal of brine, surety-bond requirements, etc., before the order was finally approved. Hoffmaster, however, delayed sending the proration order to the conservation commission for final review and ordered the hearing adjourned until June 15.

Hoffmaster sent letters to all operators in effected districts asking for sworn statements on production of oil, water production, back pressures, casing pressures, gas/oil ratios and other producing conditions from the period May 1 to June 10. He also asked all pipe lines to file data on actual purchases from May 1 to June 10 and nominations for the next 30-day period. This information is to be used in the final hearings on the proration order.

Texas Allowable Figures

DISTRICT	Basic Allowable April 1, 1939	Basic Allowable May 1, 1939	Basic Allowable June 1, 1939	Basic Allowable June 12, 1939
1 Southwest Texas	39,554	38,434	39,030	38,469
2 Southwest Texas	66,484	64,312	68,160	68,387
3 Gulf Coast	256,899	261,475	271,828	273,155
4 Southwest Texas	193,920	188,918	200,757	200,755
5 East Central Texas	29,876	30,574	30,736	30,794
6 East Central Texas	91,090	82,148	80,903	83,004
6 East Texas Field	522,339	522,450	522,632	522,718
7-B West Central Texas	36,781	36,845	38,050	37,927
7-C West Central Texas	30,048	27,525	27,796	30,880
8 West Texas	227,166	240,328	248,465	252,164
9 North Texas	115,243	118,850	122,457	123,820
10 Panhandle	88,996	89,192	89,762	89,954
	1,698,396	1,701,051	1,740,576	1,752,027

Daily Allowable on Schedule as of June 12, 1939	1,752,027
Producing Days Allowed During June	22
	38,544,594
Exemptions for June	1,363,872
Total Daily Allowable for June on Basis of Present Allowable	39,908,466
Estimated Daily Allowable for June 12 with Shut-Downs	1,330,282
Bureau of Mines Estimate of Demand for June	1,427,300
Texas Allowable as of June 12, 1939	1,330,282
Texas Under Bureau of Mines Estimate	97,018

Oil at the Capitols

President asks compact extension . . . House to vote on Connally act . . . Federal oil taxes to be renewed . . . California control law passed

Roosevelt asks Congress to extend compact

Extension until September 1, 1941, of the Interstate Oil Compact was recommended to Congress June 15 in a message from President Roosevelt, acting on a report from the secretary of state approving continuance of Congressional approval of the pact.

The message was brief, disclosing that a certified copy of the agreement to extend the compact, dated April 5, 1939, and signed by the governors of Oklahoma, New Mexico, Colorado, Texas and Michigan, had been deposited with the state department, and expressing the hope that Congress will enact the necessary legislation.

Representatives of the interested states last month visited the White House to lay their plea for extension of the government's approval of the compact before the President, and were assured by him that he was interested in their problem and anxious to aid.

No difficulty is expected in securing its approval, and it is likely the legislation will be handled without hearings in either House or Senate.

If hearings are granted upon the requests which are expected to be filed by the independent marketers who have consistently fought the compact, they will be kept very short.

Federal oil taxes likely to be extended

Continuance for a period of two years of the federal gasoline and other oil taxes which return something over $250,000,000 a year to the treasury is provided for in the new tax bill reported to the House of Representatives June 16 by the Ways and Means committee.

Action of the committee with respect to these levies was anticipated, as were the provisions of the bill substituting flat taxes on corporate income for the present system of undistributed profits taxes.

The greater part of the revenue from the oil taxes is derived from the levy on gasoline which, at one cent per gallon, developed $203,648,000 during the fiscal year 1938. Something over $31,656,000 was secured from the tax on lubricating oils at one cent per quart, and $12,517,000 was derived from the four percent tax on pipe line transportation.

Another $7,000,000 a year is derived from the import excise taxes of 21 cents per barrel on crude oil, $1.05 per barrel on gasoline, 21 cents per barrel on fuel and gas oil and $1.68 per barrel on lubricating oil.

The bill will be taken up in the House early this week. Immediately upon its passage by the House the Senate Finance Committee will begin its consideration of the measure in the hope of securing enactment before the end of the month, when the oil and other "nuisance" taxes now are due to expire.

Offshore legislation has little chance

Legislation asserting federal title to the California off-shore lands has little chance of enactment this year, it was admitted last week by Congressional leaders.

Despite strong efforts of the administration to move the measure, it is expected it will remain pigeonholed in both House and Senate committees until next year.

Hearings on the Navy's plans to secure the California lands as a new naval reserve were held before both the Senate Public Lands Committee and the House Judiciary Committee in March. Neither committee has reported the measure, although the subcommittee in charge of it for the House has filed an adverse report with the full committee.

Since a committee normally follows the recommendations of the subcommittee in charge of specific legislation, it is unlikely that the House will be asked to pass upon the resolution.

California assembly passes oil control bill

By a vote of 44 to 28, California's assembly passed and sent to the Senate a bill providing for the establishment of a state controlled commission to regulate crude production in the state. This would replace the present voluntary proration of production.

Illinois buyers must take stripper output first

In a move to aid operators of 14,000 stripper wells in the old Illinois fields, the Illinois Senate last week approved a bill requiring crude oil purchasers to take 100 percent of the offerings from the stripper fields before buying oil from wells in the new pools. Wells in the old fields have been undergoing proration for the past 9 years, except for the period between May, 1935, and December, 1938. The bill was messaged to the house for concurrence.

The house, meanwhile, passed and sent to the senate the Adamowski bill to authorize the governor to extend the state's membership in the Interstate Oil Compact from September, 1939, to September, 1941. Effect of the bill, should it gain final approval, is nil, as Illinois is without legislation authorizing compulsory proration of oil wells and there is no chance of such legislation being passed during the current session. The Illinois representative on the compact would continue to sit as an "observer."

Also passed by the house and sent to the senate were 2 bills introduced by members of the special legislative oil industry investigating commission. One would require filing of a log on each well with the state geological survey division within 15 days after its completion, and the other would require owners and producers of oil and gas wells from which oil in quantities of more than 5 barrels per day is being produced and transported from the well to any storage tanks by means of a pipe line to attach a meter to each such pipe line at a point between the pump and the storage tanks showing accurately the number of gallons of oil or cubic feet of gas being so transported and stored daily. The latter measure, if approved by the senate, would become effective January 1, 1940.

House to take up Connally act June 20

Legislation extending the Connally Hot Oil Act for a period of 3 years will be brought up in the House of Representatives for passage June 20 under a special order which has been granted by Majority Leader Rayburn.

Debate on the measure is expected to be relatively brief, with the chief opposition offered by Representative Coffee (Dem., Wash.) who has consistently opposed the Connally act, the Interstate compact and other conservation measures.

Following its passage by the House, the bill will have to go to conference for a final determination of the period for which the act shall be extended. The Senate, in passing the measure, made the Connally act permanent law, but is not expected to insist in view of the action of Texas in continuing its conservation act only temporarily.

House committee recommends extension of Connally Act

With six of the principal oil-producing states enacting conservation statutes "past experience presents very definite reasons for the government to cooperate to the extent provided in this legislation," it was declared in Washington last week by the House committee on interstate and foreign commerce in a report recommending extension of the Connally "hot" oil act.

However, the committee added, while it is in sympathy with some of the arguments presented by the secretary of the interior for making the law permanent, "it is felt that until the principal oil-producing states show a willingness to enact permanent conservation statutes, such as the enforcement of this legislation contemplates, Congress should continue cooperation on behalf of the federal government on a temporary basis only."

For this reason, it was explained, the committee amended the bill, which as passed by the Senate made the Con-

nally act permanent, so as to continue the measure for only three years.

The committee also eliminated a Senate provision specifically extending the criminal penalties of the law, which was inserted as a result of a Texas District Court's decision that failure to do so in extending the act in 1937 precluded prosecutions, after the extension, for violations occurring prior thereto, explaining that the Supreme Court's reversal of that decision made the provision unnecessary.

The report traced the history of the legislation from the investigation made by the committee in 1934 and the situation which followed invalidation of the National Recovery Act in 1935.

During the fiscal year ended June 30, 1938, it was pointed out, 6942 applications for tenders were filed, of which 4992 were for 254,614,303 barrels of crude oil and 1950 were for 27,716,209 barrels of petroleum products, a total of 282,303,512 barrels. The appropriation for expense of the administration of the law for the year was $285,000, about one-tenth of a cent per barrel.

Monopoly investigation postponement likely

Postponement until next fall of the administration's monopoly committee probe of the oil industry, originally scheduled to open this month, was seen probable in Washington last week as a result of representations by the industry that it will not be able to complete for some time the preparation of the material which it plans to present.

Senator Joseph O'Mahoney (Democrat, Wyoming), chairman of the Temporary National Economic Committee, has held a number of conferences with representatives of the industry and is expected to announce the committee's decision within the next few days.

Hearings in Fall

Representatives of the industry are understood to have informed the committee that they will be unable to have their information and statements ready for submission before August. If a delay is granted, the hearings probably will not start before September or October.

It is generally understood that new moves against the industry by the Department of Justice at Danville, Ill., and on the West Coast has interfered with efforts of the industry to prepare its data for the "round table" investigation which the committee some time ago announced would be tried out on oil.

Texas sales tax rejected again

The Texas legislature again refused last week, by 91 to 55 votes, to enact the constitutional amendment providing for a sales tax. Because after another week's work proponents of the bill could not gain one vote, it seemed possible they might abandon their efforts.

However, because no constitutional amendment can be submitted except in a regular session, and the next regular session will not begin until 1941, another attempt may be made before the legislature goes home on June 21.

Market Situation

Quarter cent advance in gasoline prices becomes general . . . Million barrels of gasoline withdrawn from storage despite record runs to stills

Markets consolidating recent price gains

The markets late last week were in the process of consolidating recent gains, and no further important price changes appeared to be immediately ahead.

The one-half-cent advance in gasoline tank wagon prices throughout most of the United States, initiated by Sinclair Refining Company, gained general support among other marketers, most of whom raised their prices similarly.

The improvement of the tank wagon prices was in line with similar advances in preceding weeks in tank car prices at the refineries.

It appeared, following the tank wagon price advances, that the refinery prices would remain unchanged at least for some time, until the markets could demonstrate stability at the new price levels.

Crude Markets Bolstered

The crude oil markets have been strengthened by the better product prices, and it is widely believed that general reductions of crude postings will be avoided, despite the recent 10-cent reductions in Illinois, Indiana, and western Kentucky.

This opinion is based on the fact that the Middle Western reductions resulted primarily from overproduction in the new Illinois fields, and on the fact that production allowables in the Mid-Continent states are under market demand.

The increase of one-half cent a gallon in gasoline tank wagon prices, initiated by Sinclair Refining Company, became effective June 14, and on or about the same date similar advances were made by various other prominent companies, including The Texas Company, Cities Service Oil Company, Pure Oil Company, Phillips Petroleum Company, Skelly Oil Company, Barnsdall Refining Corporation, Standard Oil Company of Nebraska, Ohio Oil Company, and others.

Gasoline Use Large

The improvement of the gasoline market in the past several months has been made possible by the remarkably good demand that has prevailed, the markets having absorbed around 5 percent more gasoline so far this year than in the corresponding period last year.

However, refinery runs of crude have been stepped up to record levels, and there is some danger that the large runs may prevent a normal withdrawal of gasoline from storage this summer. In fact, the withdrawals since March 31 have been smaller than normal. The crude runs to stills averaged 3,510,000 barrels daily in the week ended June 10, a new all time record. Consequently, gasoline production also was exceptionally large for that week.

The industry took nearly a million barrels of gasoline from storage in the week of June 10, but withdrawals in some other recent weeks have been relatively small.

Crude runs at new peak but production lower

The latest weekly statistics of the oil industry, covering the week ended June 10, reflected a curtailment of crude oil production but increased refinery operations, and inventories of gasoline were reduced, while those of both light and heavy fuel oils were seasonally increased.

Production and Runs

United States crude oil production came down sharply from 3,558,800 to 3,376,950 barrels daily, but was 7.8 percent higher than in the week of June 11 last year, when unusually strict curtailment prevailed.

Crude runs to refinery stills rose by the large amount of 95,000 barrels daily to a new all-time peak of 3,510,000 barrels a day for the week ended June 10. They were 11.2 percent larger than in the corresponding week last year.

Gasoline Situation

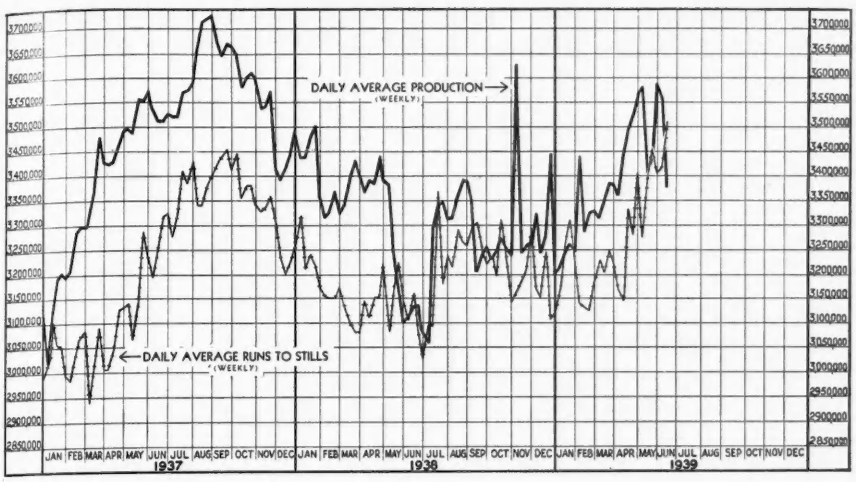
Gasoline production increased proportionally, having risen 52,000 barrels daily to a daily average of 1,657,450 barrels in the week of June 10, when the total output was 11,602,000 barrels.

Despite the large gasoline production, however, the output was fully absorbed by the markets, and in addition, nearly a million barrels of gasoline was withdrawn from storage, which came down to 82,716,000 barrels. The stocks then were 4 percent smaller than a year previously, when the total on hand was 86,149,000 barrels.

Fuel Oils

Stocks of gas oil and distillate fuels (heating oils) were built up further in preparation for fall-winter consumption. They rose to 29,357,000 barrels from 27,440,000 barrels a week before. Those stocks are around the same level as at this time last year.

The inventories of residual fuel oil (industrial fuels) were expanded about a million barrels in the week ended June 10, having increased to 111,239,000



barrels. They are, however, several million barrels lower than at this time last year.

Crude Stocks Down

Stocks of crude oil were reduced about 350,000 barrels in the week ended June 3, according to the Bureau of Mines, which reported a total of 277,947,000 barrels on hand at the end of that week.

Imports of petroleum for domestic use and receipts in bond at principal United States ports for the week ended June 10 totaled 1,531,000 barrels, a daily average of 218,714 barrels, compared with a daily average of 223,000 barrels for the week ended June 3 and 231,393 barrels daily for the 4 weeks ended June 10. These figures include all imports, whether bonded or for domestic use, as it is impossible to make the separation in weekly statistics. The 1,531,000 barrels imported during the week included 1,084,000 barrels of crude oil, 356,000 barrels of fuel oil, and 91,000 barrels of other petroleum products.

Advances in gasoline chief price changes

Price changes in the oil industry during the past week were limited largely to those put into effect on gasoline, a ½ cent a gallon increase in dealer tank wagon prices having been made effective June 14 by most companies in nearly all states except those on the Pacific Coast.

These revisions were made in meeting the ½ cent advance in tank wagon prices in 42 states by Sinclair Refining Company, effective June 14.

Companies that met the increase included The Texas Company, Tide Water Associated Oil Company, Cities Service Oil Company, Pure Oil Company, Phillips Petroleum Company, Barnsdall Refining Corporation, and Ohio Oil Company.

Gasoline tank car prices at the refineries have remained generally unchanged since announcement of the advances in tank wagon prices, and opinion is divided as to whether the tank car prices will show any additional improvement; those prices having been advanced substantially prior to the raising of the tank wagon prices last week.

No important changes have been made in crude oil prices since the reductions of 10 cents a barrel June 8 in Illinois, Indiana, and western Kentucky.

Gasoline in Tank Cars

U. S. motor gasoline at Oklahoma refineries ranged last week about as follows: 62 octane and below, 4¼ to 4½ cents a gallon; 63 to 66 octane, 4½ to 4¾ cents; 67 to 69 octane, 4¾ to 5 cents; 70 to 72 octane, 5 to 5¼ cents.

Corresponding prices in the Chicago market were: 4 to 4½ cents, 4⅜ to 4½ cents, 4½ to 4⅞ cents, and 4⅝ to 5¼ cents.

In East Texas, 60-62, 400 end point gasoline was priced generally at 4¼ cents a gallon.

Natural gasoline, grade 26-70, was selling in the Mid-Continent markets, f.o.b. refineries, at 2¾ cents a gallon, and sales were reported at the same price f.o.b. Breckenridge, Texas.

Kerosene prices f.o.b. Oklahoma refineries ranged from 3¾ to 4¼ cents a gallon for the 41-43 water white grade, and from 3⅞ to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago market were 3½ to 4⅛ cents and 3⅝ to 4⅜ cents.

Prices of fuel oils were generally unchanged last week. In the Chicago market range oil was priced from 3¼ to 3⅞ cents a gallon. The No. 1 white oil was priced from 3¼ to 3¾ cents, and No. 1 straw from 3¼ to 3½ cents. No. 2 straw was 3⅛ to 3½ cents. No. 3 oil was 2⅞ to 3⅛ cents. No. 5 oils were 57½ to 70 cents a barrel. The No. 6 oil was quoted at 35 to 45 cents.

Natural gasoline output continues upward trend

Production of natural gasoline again increased in April, the daily average being 5,925,000 gallons compared with 5,734,000 gallons in March and 5,839,000 gallons in April, 1938, it was reported last week by the Bureau of Mines.

Total production for the month was 177,744,000 gallons, the same as in March, which was one day longer, the

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
August 28, 1937	**3,731,450	3,425,000	309,506,000	66,997,000	112,111,000	
September 25, 1937	3,666,300	°3,455,000	307,974,000	65,620,000	116,472,000	
March 19, 1938	3,433,550	3,080,000	306,380,000	**93,192,000	122,067,000	
April 30	3,396,150	3,215,000	307,147,000	91,339,000	21,480,000	106,790,000
May 28	3,098,650	3,150,000	301,583,000	87,946,000	23,619,000	110,696,000
June 25	3,083,900	3,025,000	293,463,000	82,412,000	25,343,000	112,458,000
July 30	3,316,400	3,240,000	288,514,000	76,864,000	27,573,000	116,721,000
August 27	3,388,500	3,255,000	285,029,000	71,754,000	29,747,000	117,179,000
September 24	3,251,150	3,220,000	280,278,000	68,605,000	31,183,000	119,285,000
October 29	3,237,500	3,145,000	275,824,000	67,590,000	33,690,000	120,029,000
November 12	3,243,250	3,180,000	273,394,000	¶ 67,551,000	34,175,000	120,491,000
November 26	3,260,900	3,295,000	270,563,000	68,628,000	33,749,000	119,885,000
December 10	3,245,100	3,150,000	§269,509,000	68,587,000	32,068,000	118,711,000
December 31	3,201,450	3,115,000	273,024,000	71,695,000	29,082,000	115,741,000
January 28, 1939	3,248,250	3,235,000	271,763,000	77,279,000	26,583,000	112,766,000
February 25	3,328,850	3,185,000	271,758,000	84,597,000	23,419,000	110,252,000
March 4	3,314,850	3,230,000	272,971,000	85,379,000	22,449,000	109,481,000
March 25	3,382,350	3,225,000	273,915,000	87,561,000	21,487,000	107,551,000
April 22	3,526,700	3,280,000	277,156,000	*87,769,000	21,058,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	†25,844,000	†108,409,000
May 6	*3,580,900	3,275,000	*278,607,000	86,216,000	26,167,000	108,597,000
May 13	3,402,500	3,400,000	277,739,000	84,808,000	25,993,000	108,513,000
May 20	3,438,400	**3,460,000	277,068,000	84,294,000	26,389,000	109,405,000
May 27	*3,585,250	3,405,000	278,289,000	84,152,000	26,992,000	109,386,000
June 3	3,558,800	3,415,000	277,947,000	83,637,000	27,440,000	110,219,000
June 10, 1939	3,376,950	3,510,000	.....	82,716,000	29,357,000	111,239,000
June 11, 1938	3,131,500	3,155,000	‡298,266,000	86,149,000	†24,864,000	†111,233,000
Change from year ago	+7.8%	+11.2%	—7.1%	—4.0%	+18.0%	+0.0%

** All time peak. * Peak for 1939. § Lowest for 17 years. ‡ Stocks, June 4, 1938.
° Peak prior to 1939. ¶ Lowest for year.
† Prior to week ended April 29, 1939, figures did not include stocks at terminals, in transit, etc., except in California. Such stocks, outside California, included for first time in week of April 29, 1939, consisted of 4,772,000 barrels of gas oil and distillates and 2,769,000 barrels of residual fuel oil.

bureau stated. The chief gains in production occurred in the East Texas, Texas Gulf Coast and Panhandle.

Stocks continued to increase, those at refineries advancing during the month from 101,220,000 to 107,142,000 gallons, and those at plants and terminals from 97,062,000 to 123,186,000 gallons, the report showed. The total of stocks, however, was 29,190,000 gallons less than on hand April 30, 1938.

Crude runs to stills and imports higher in April

Crude runs to stills in April showed a marked upward trend, the daily average of 3,310,000 barrels being 119,000 barrels above that of the preceding month and 121,000 barrels above the April, 1938, figure, it is shown by the monthly crude report of the Bureau of Mines.

Imports of foreign crude also increased substantially, the daily average of 98,000 barrels showing a jump of 45,000 barrels over March, it was said.

Total receipts of crude at refineries in April were 98,266,000 barrels, of which 95,334,000 barrels was domestic and 2,932,000 barrels foreign, the report showed. Crude runs to stills were 99,303,000 barrels, and fuel and losses 54,000 barrels. As a result of the heavy crude runs, stocks were reduced by more than 1,000,000 barrels, dropping from 52,766,000 barrels April 1 to 51,675,000 barrels April 30, it was stated.

Crude Production

Slight rise in United States output leaves total still well under figure estimated by federal board.

AVERAGE daily output of United States oil fields during the week ended June 17 was 3,433,770 barrels. Stability was the rule as the production pace of the previous week was held. The production level established last week was 6840 barrels higher than that of the week before but a healthy condition carried over from the preceding week and production was 57,300 barrels less than the Bureau of Mines estimate of demand for domestic crude.

Texas production dipped to 1,315,000 barrels, off 6950 barrels from the week before. The decrease lessened the excess over state allowable to 1778 barrels and placed output 112,000 barrels daily below the bureau's recommendation.

California lifted 616,800 barrels daily to ride 26,800 barrels daily over producer's self-imposed allowable and 22,200 barrels over federal forecast.

Oklahoma output fell back to 441,975 barrels daily, off 7825 barrels from the week prior and 8325 barrels less than bureau estimate, but 13,975 barrels in excess of state allocation.

Louisiana yield edged up 2275 barrels to 268,375 barrels daily, where it was 5352 barrels over conservation figures and 3375 barrels over the bureau.

Illinois recorded one of its rare reverses, going down to 216,550 barrels daily from the 220,000-barrel mark set the week before and cutting the excess over the federal figure to 42,250 barrels.

Kansas averaged 161,970 barrels daily, or 2040 barrels more than in the previous week. Production was lower by 4030 barrels than state proration quota and higher by 9570 barrels than bureau estimate.

Evansville barge terminal operating

The first barge of crude from southern Indiana was shipped from a new terminal on the Ohio River at Evansville, Indiana, last week by Marimac Oil Company. Its destination was Charleston, West Virginia, and the shipment was 8500 barrels.

The new terminal, which is being made available to all producers in the area, has a loading capacity of 1500 barrels an hour. Crude shipped last week was taken from independent producers in the Griffin pool of Gibson County.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (June)	State Allowable in June	BARRELS DAILY FOR WEEK ENDED June 17	June 10
TEXAS—				
Texas Panhandle			73,250	68,000
North Texas			85,600	93,500
West Central Texas			31,050	32,900
West Texas			208,400	212,000
East Central Texas			92,200	88,500
East Texas Field			388,500	388,800
South Texas			226,400	232,200
Texas Gulf Coast			209,600	206,050
Total Texas	1,427,300	1,313,222*	1,315,000	1,321,950
CALIFORNIA—				
Long Beach			45,700	47,100
Santa Fe Springs			28,100	27,300
Huntington Beach			26,900	26,600
Dominguez			19,900	19,300
Ventura Avenue			38,000	37,200
Midway-Sunset			59,400	48,700
Kettleman Hills			58,000	43,300
Wilmington			80,600	78,800
Others			260,200	274,600
Total California	594,600	590,000†	616,800	602,900
OKLAHOMA—				
Oklahoma City			101,525	101,950
Seminole Area			105,250	111,200
Fitts			25,500	26,750
Others			209,700	209,900
Total Oklahoma	450,300	428,000	441,975	449,800
LOUISIANA—				
North Louisiana			73,825	73,150
South Louisiana			194,550	194,950
Total Louisiana	265,000	263,023	268,375	268,100

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (June)	State Allowable in June	BARRELS DAILY FOR WEEK ENDED June 17	June 10
ILLINOIS—				
Salem			116,000	116,000
Loudon			44,000	46,500
Other New Pools			48,000	49,500
Old Pools			8,550	8,500
Total Illinois	174,300		216,550	220,500
KANSAS—				
Burrton-Haven			9,770	10,280
Russell County			20,100	22,750
Silica			8,525	11,900
Others			123,575	114,720
Total Kansas	152,400	166,0000	161,970	159,930
NEW MEXICO	117,000	117,000	111,000	111,050
EASTERN STATES—				
Pennsylvania Grade			72,650	73,850
Others, Eastern			6,050	5,950
Total Eastern States			78,700	79,800
MOUNTAIN STATES				
Wyoming	73,300		62,650	56,250
Montana	17,300		15,350	14,650
Colorado	5,000		3,850	3,900
Total Mountain States	95,600		81,850	74,800
MICHIGAN	53,400		66,800	63,950
ARKANSAS	54,700		57,550	55,900
KENTUCKY	17,000		14,200	14,225
INDIANA	2,700		3,000	4,000
Total United States	3,491,000		3,433,770	3,426,930

* Daily average, considering Saturday and Sunday shut-downs, water exemptions, and exemption at Rodessa.
† Recommendation of Central Committee of California Oil Producers Association.

Pennsylvania Meeting

Self confidence and a return to old-time fighting spirit declared needs of industry at annual meeting of Pennsylvania Grade Crude Oil Association

Self confidence and a return to the old-time fighting spirit are the immediate needs of the Pennsylvania oil industry, declared W. Floyd Clinger, of Warren, Pennsylvania, president of the Pennsylvania Grade Crude Oil Association, before the Sixteenth Annual Meeting last week.

"If there is anything wrong with our industry it is a lack of vision of our future," he asserted. "We do not face the future with the confidence and courage that 80 years ago drilled the first well and went forward to establish a mighty industry. We do not seem to have the same fighting spirit which it took to form this association."

Clinger pointed out that not Pennsylvania crude alone but almost every commodity had dropped in price since 1926, which is generally regarded as a normal year. Many raw materials have fallen much further than Pennsylvania crude and he pointed out that there is evidence that an international situation in over-production of commodities has developed which, for the time being, has baffled governments and economists alike.

Only the vigorous advertising campaign of the association and its members and the ingenuity of its sales organizations have provided markets to absorb the Pennsylvania crude output.

Clinger added:

"I am confident of success. First, we have been given a raw material that is superior to any others. Second, Pennsylvania has established a good name for itself. It is a good name that cannot be lost over-night by the attacks of our competitors; it can only be lost by our own foolish lack of vision. Third, our association provides a co-operative agency in which producers, refiners and marketers can do a job that could not be accomplished separately. It is only when some one person or set of persons come to the belief that he or they can survive at the expense of other units of the industry that we need to fear failure. Fourth, we are protecting ourselves by a program of basic research in both production and manufacturing.

"We have only to produce our crude as cheaply as possible, add to the natural quality of our oils by modern refining processes and then deliver it to the public with a guarantee of Pennsylvania quality. It is a full-sized man's job but that we cannot perform that job I cannot agree."

Directors Elected

Nearly 200 delegates registered from all parts of Western Pennsylvania for the two-day meeting. New directors were elected as follows:

W. F. Clinger, Clinger Oil & Gas Company, Tidioute, Pa.; P. L. Melvin, Towne Melvin Oil Company, Bradford, Pa.; Otto Walchil, Richardson Petroleum Corporation, Wellsville, N. Y.; John A. Beck, Pennsylvania Refining Company, Butler; S. Messer, Quaker State Oil Refining Corporation, Oil City; W. R. Reitz, Quaker State Oil Refining Corporation., Oil City; D. T. Andrus, Bradford (Producer); H. D. Atha, Gordon Oil Company, Mt. Pleasant, Mich.; A. E. Booth, Bradford; E. C. Breene, Oil City; W. J. Brundred, Brundred Oil Corporation, Oil City; E. M. Craig, Freedom Oil Works, Freedom, Pa.; H. M. Caruth, Canfield Oil Company, Cleveland; C. R. Daugherty, Butler; A. D. David, Bradford, Penn Refining Company, Clarendon, Pa.; C. M. Davidson, Standard Oil Company of N. J., New York, City; W. J. Healy, Healy Petroleum Corporation, Bradford; D. E. Hoffman, Tide Water Associated Oil Company, New York; Otto Koch, Kendall Refining Company, Bradford; H. R. Lewis, Conewango Refining Company, Warren; H. A. Logan, United Refining Company, Warren; D. B. McCalmont, Franklin; John H. McCoy, Columbus, Ohio; F. E. Richart, Ebenezer Oil Company, Wellsville, N. Y.; D. T. Ring, Preston Oil Company, Columbus, Ohio; R. G. Sonneborn, Franklin Creek Refining Corporation, Franklin; C. L. Suhr, The Pennzoil Company, Oil City; C. E. Streeter, Carter Bradley & Streeter, Bradford; T. P. Thompson, Bradford; S. M. Vockel, Waverly Oil Works Company, Pittsburgh.

Research Discussed

Pennsylvania oil research is insurance which pays current dividends as well as affording great protection for a relatively small premium, Dr. A. W. Gauger, of State College, Pennsylvania, director of research in the School of Mineral Industries at Pennsylvania State College, the second speaker Thursday, said.

Dr. Gauger declared that Pennsylvania oil men have led the world in the creation of new methods of producing, refining and marketing petroleum. He foresaw still further advancements in technology which would lower the cost of producing oil, increasing the yield, improve the finished product and supply an increasing national demand with lubricants designed to meet completely the needs of modern industry.

At the present time, he asserted, Pennsylvania grade area is in better position to face future demands than is the industry as a whole. This ought to still fears of those who feel that Pennsylvania grade oil will soon pass out of the picture from a lack of supply of crude, he said. Dr. Gauger, expressing his confidence in the future, said:

"Petroleum lubricants are far in advance of the machinery which they serve and Pennsylvania leads the pack. 'The first oil well is still first.' We have in the Pennsylvania region the largest field of uniform quality crude in the world. We produce a premium lubricant and we shall be in a much better position to hold our own than others if and when synthetic products enter the competitive picture."

Featuring Friday's program was an address by Leo Ranney, of McConnellsville, Ohio, well known consulting engineer, who predicted that oil wells that are "in the sand" all the way instead of only 30 or 40 feet of their depth would be the future means of stripper well developments in the Pennsylvania region.

Ranney said he had developed drilling equipment which could be controlled from a central shaft so that wells could fan out in all directions, much as red lines now radiate from a central power. His new drill, he said, could be turned up, down or sideways at will and the operator always knew where the bit was working.

Ranney said shafts from which his drill could operate practically should be no deeper than 1000 feet, six or eight feet in diameter and should be sunk and lined at a cost of not more than $100 a foot. The working chamber at the bottom should be about 20 feet in diameter. From this working chamber horizontal wells are drilled like spokes in a wheel. Fifty-foot core barrels are recommended.

A survey of the well is taken with every core and every foot of the hole is platted. The hole is turned upward or downward to keep within the substratum which previous vertical wells have shown to be the one to follow. It is easy to turn the hole upward or downward and the only limit as to length is the property line or the strength of the drilling machine. Each shaft is expected to work from 600 to 800 acres of sand. From 16 to 24 horizontal wells may be drilled from each shaft, producers first, then pressure wells. Ranney said the maximum cost of development for a tract of 600-800 acres is tentatively estimated at $400 per acre which, he said, should be repaid within two or three years by an output of 500 barrels per acre.

Also speaking were Victor H. Scales, of New York, director of public relations of the American Petroleum Industries Committee; Harvey Stowers, of South Bend, Indiana, sales promotion manager of the Studebaker Corporation of America; C. Bedell Monro, of Pittsburgh, president of the Pennsylvania Central Air Lines, and S. F. Pratt, of Oil City, Pennsylvania, Pennsylvania Grade Crude Oil Association's European manager.

"Satisfactory public relations, like character, must be lived and earned," according to Scales. "Putting a top hat on a crooked mind, white tie and tails on a palsied frame, patent-leather shoes on broken arches, may deceive some little people for some little time; but the obvious lack of sincerity jeopardizes respect and favor.

"Fundamentally, public relations is an operating technique which so guides, explains and expounds the conduct of corporate enterprise as to create favorable reactions and sympathetic interest in the minds of all."

Monro said that "in two years we have been able to fly about 100,000 miles between endline overhauls as against 50,000 in 1937, because of improvements in aviation engine oil."

Ninety percent of the airplanes now flown in the United States are lubricated with Pennsylvania grade oils, he said. Still faster and bigger ships of the future, he said, would expand the air market for Pennsylvania oil products.

"Much can be accomplished with lubricants, where improvements have hitherto not been as pronounced as in fuels. Hence there is a wider field. Greater oiliness and film strength are required with lubricants," said Monro. "Also notable to observers has been the relatively low oxidation resistance of oils used in aircraft engines. There are many avenues of research on the subject which holds both a challenge and promise for future developments."

An optimistic picture of the export market, despite wars and rumors of wars was presented by Pratt. While political disturbances and currency manipulations have affected the total volume of Pennsylvania oil sold in some parts of Europe—France, England, Belgium, Holland and the Scandinavian countries are still fertile markets where Pennsylvania lubricants are preferred to any other.

Pipe Line News

Sohio buys Tide Water six-inch line in Illinois

Additional outlet for Illinois Basin fields was assured last week when Standard Oil Company of Ohio bought the 6-inch trunk line of Tide Water Pipe Line Company from Stoy Station, eastern Illinois, to the Pennsylvania state line.

Through Sohio Corporation, Standard Oil Company of Ohio is one of the leading purchasers of Illinois oil, taking around 30,000 barrels daily. It buys oil in Aden, Dix, Centralia, Clay City, Loudon and Noble. Gathering systems and short trunk lines to existing facilities have been used to move the oil eastward to refining plants in Lima, Toledo and Cleveland. Trunk lines are due to be built from the Noble and Clay City fields to connect with the Stoy Station terminus.

A Pioneer Line

The line was the first one built from Pennsylvania westward when the early Indiana and Illinois fields were developed. It is part of a system from that area to tidewater at Bayonne, New Jersey. Tide Water Pipe Line Company, subsidiary of Tide Water Associated Oil Company, will continue operation of the line from northwestern Pennsylvania to seaboard.

The western part of the line was inactive until the new Illinois Basin fields were developed. Recently it has been used by Magnolia Petroleum Company for movement of Illinois oil to refining plants of Socony-Vacuum Oil Corporation in the east. Magnolia Pipe Line Company is now building 450 miles of 8-inch and 10-inch carrier from East St. Louis to Lima, Ohio. Last week Texas-Empire Pipe Line Company announced construction of a 10-inch line from the Salem field 120 miles northward to connect with the trunk line system from the Mid-Continent to the Chicago refining center.

The two new lines plus a heavier load for the line bought by Standard Oil Company of Ohio, should give the Illinois Basin fields additional outlet of around 75,000 barrels.

Propose line from Crockett shallow pool

Gilcrease Oil Company, San Antonio, which controls the bulk of the production in the Crockett shallow pool, Crockett County, West Texas, proposes to construct a 10-mile 4-inch crude line from the area to McCamey, where deliveries will be made to Humble Pipe Line Company. The pool was discovered in April, 1938, and has 16 pumpers in the 1400-1600-foot pay. Operators have failed in their efforts to induce pipe line companies to build into the area.

Line will take Joaquin gas to Mansfield, Louisiana

Jack Lanier of Shreveport is planning a six-inch gas pipe line from Portex Oil & Gas Company's re-cycling plant at Joaquin, Shelby County, Texas, to Mansfield, Louisiana. Right-of-way has been secured and pipe is being bought for the line, which will be welded. It will take gas from the Joaquin field to a point near Mansfield, about 20 miles. The Hunter Company is negotiating with Portex Oil & Gas Company to strip its gas production from its wildcat gas well, Parker 1, Section 26-12n-16w, DeSoto Parish, and contract may call for drilling other tests on the Hunter Company holdings. Only one well was drilled and it was a five million foot wet gasser in the Glen Rose.

Bayou State Oil Corporation of Shreveport is laying a 4½-inch welded line from the northeast end of the Rodessa field in township 23 north, range 15 west, near Ida, to its refinery at Hosston, in township 22 north, range 15 west, about 12 miles. Contract has been signed with National Refining Company to take one and one-half million cubic feet of Rodessa gas daily for the operation of the Hosston refinery.

Sinclair operating new line in Cooke County

Sinclair Refining Company has placed in operation a 14.3-mile 6-inch pipe line section in Cooke County, Texas, that will permit the direct delivery of crude runs from the Walnut Bend pool to its refinery at Fort Worth. The newly completed unit extends east from Windsor Switch, which has served as a tank car loading point, to Muenster, where connection is made with the company's Ringling-Fort Worth 8-inch trunk line.

Royal Dutch is confident regarding oil outlook

A hopeful view of the oil industry's long-term outlook was taken by the Royal Dutch Company in its lately released annual report covering 1938.

"Since it may be expected that there will be a very great increase in motor traffic with the advent of more tranquil times," stated the report, "there is every reason to anticipate an eventual rise in the demand for oil products.

"This emphasizes once again the view we have expressed so often before, that is, that the petroleum industry also stands to gain far more in a world where peace and confidence prevail than in one where unrest or the force of arms holds sway."

In the Royal Dutch Company report, it was estimated that world consumption of petroleum fell in 1938 by 2,000,000 tons; and world production was estimated at 280,276,000 metric tons (including natural gasoline) in 1938, as compared with 286,916,000 tons in 1937, a decrease of about 3 percent. Production increased in Russia, Venezuela, The Netherlands Indies, Colombia, Trinidad, Canada, British Borneo, Egypt, and a few other countries. But it decreased in the United States, Mexico and Roumania.

Production of the companies of the Royal Dutch group declined to 29,924,381 metric tons in 1938 from 31,987,047 tons in 1937, but the chief cause was the drop in Mexico to 953,921 tons in 1938 from 4,193,916 in 1937, in consequence of the government's expropriation of the company's properties.

Radio team to pay tribute to oil

Oil men throughout the nation will be interested in the radio broadcast of Lum and Abner, the hill-billy Arkansas crossroads storekeepers, on Monday night, June 26, when these two merchants begin to learn something about the oil business by installing a gasoline pump in front of their country store in Pine Ridge.

"The gasoline business is a powerful interestin' work agin you go into it," says Lum Ed'ards, of the Pine Ridge firm. "I never knowed before how many people depend on it fer a livin' and how much good it does the country in taxes and roadbuildin' and providin' conveniences and all sich as that."

Oil men who helped to work out the broadcast through courtesy of the sponsors of the program, General Foods, declare that although most of the discoveries which Lum and Abner make are typical of the industry, few oil men have had as much fun in making them as these hill-billy storekeepers have.

The program will be on the Columbia network at 9:15 p.m. Central time.

Body will study uniform accounting for utilities

Uniform accounting for all gas utilities in Texas will be considered at a hearing before the Texas Railroad Commission scheduled for July 17 at Austin.

WEEK'S DRILLING HIGHLIGHTS

South Louisiana

Discovery of Wilcox sand production at Villa Platte was being heralded as the most important strike of the year. The ultimate recovery of the pool, previously productive from two shallower horizons, was expected to be doubled to approximately 70,000,000 barrels. A wildcat near Merryville, Beauregard Parish, was looking promising. A new gas and distillate field was discovered on the North Elton prospect of Allen Parish. A new producing sand was found on the east side of the Charenton field, St. Mary Parish.

Illinois

A new basin field was opened 6 miles south of Centralia in Jefferson County. The well swabbed 70 barrels in 12 hours from either the Benoist or Aux Vases sand. The Clay City field was extended westward by a 1000-barrel well. A 300-barrel McClosky well enlarged the North Olney field a half-mile southeast.

New Mexico

Southwest portion of Maljamar field is in for extensive development following an extension and farm out of acreage to smaller concerns. Production area of the Cooper field was extended by a well which made 54 barrels in 6 hours.

Southwest Texas

Recent successes have encouraged wildcatting. During the week new fields were opened in Jim Wells, Nueces and San Patricio counties, and limits of production have been extended in fields in Refugio and Jackson counties.

Comparison of Permits Granted for New Wells

STATE	Week Ending June 17	Total this Mo.	Total this Year	Total this Date Last Year	1938 Year Total
Arkansas	5	21	106	108	247
California	18	62	476	538	1,146
Louisiana	27	118	596	611	1,214
Kansas	28	94	672	752	1,453
Michigan	27	102	597	362	953
Oklahoma	30	117	963	982	1,978
Texas	233	579	4,979	6,706	12,369
Total	368	1,093	8,215	10,104	19,360

Oklahoma

Encouraging indications of a possible oil pool for Southern Oklahoma were had when a Carter County wildcat had 900 feet of oil in the hole from Hunton lime. Three wells ready to test the First Wilcox sand give promise of a second producing formation in the Coyle pool, Payne County.

North Texas

In Young County, a half-mile west of Loving, a new deep pool was opened when a flow of 159 barrels of oil was recovered in first 30 minutes. Clay County deep prospecting was given encouragement by showings in several tests.

North Louisiana

One hundred million feet of wet gas was recorded as the flow from the sixth well completed in the Lake Bisteneau district of Bienville Parish. A survey of the Shreveport field shows that seven of the 31 wells there are making salt water, some as much as 16 percent.

Arkansas

Batting average for the new Lewisville field was 500 as two failures were recorded against the two producing wells — and they were small hits. Another operation has started.

West Texas

Schleicher County was added to the list of oil producing areas in West Texas by a well flowing 65 barrels of 38-gravity oil in 24 hours. Another test in the same county also is showing. A small oil show in western Ector County may indicate opening of another pool.

Kentucky

A new Daviess County field apparently was in the making near Maceo, as oil rose 70 feet in a test that encountered the Jett formation at 776 feet.

Indiana

The Griffin field of Gibson County was extended two miles east by a test that produced 175 barrels in three hours through a half-inch choke from the McClosky lime.

Kansas

A new field north of production at Atherton, Russell County, was definitely proven for Western Kansas. Extensions were indicated for the Pawnee Rock pool, Rush County, the Burrton field, Harvey County, the Zurich pool of Rooks County, and the Barnholdt field in McPherson County. High yield of the Arbuckle lime in the Hittle field, Cowley County, was demonstrated by a 22,000-barrel well.

Summary of Wells Completed in the United States Week Ending June 17, 1939

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Completions to Date 1939	Completions to Date 1938
Alabama	....	....	....	....	.....	1	2
Arkansas	5	2	....	3	1,152	103	114
California	12	11	....	1	9,752	486	576
Colorado	....	....	....	....	.....	11	5
Florida	....	....	....	....	.....	....	....
Illinois	56	47	....	9	22,066	1,677	445
Indiana	11	4	1	6	1,280	74	53
Kansas	46	38	4	4	52,871	594	858
Kentucky	6	3	....	3	175	283	324
Louisiana	23	12	1	10	3,677	457	500
Michigan	44	28	2	14	12,310	628	374
Mississippi	....	....	....	....	.....	2	10
Montana	2	2	....	....	385	52	27
Nebraska	....	....	....	....	.....	....	1
New Mexico	19	17	....	2	7,249	289	246
New York	11*	11*	....	....	57	218*	371*
Ohio	15	8	5	2	66	378	431
Oklahoma	43	25**	5	13	8,535	947	1,040
Pennsylvania	41*	34*	6	1	43	587*	1,123*
Texas	209	151	6	52	137,758	4,575	6,253
West Virginia	6	1	4	1	15	218	340
Wyoming	....	....	....	....	.....	61	49
Total this week	549	394	34	121	257,391	11,643†	13,045†‡
Total last week	454	285	37	132	170,326	11,093†	12,476†‡
Total this year	11,643†	7,946	810	2,886	10,353,147	....	....

* Includes water-input wells. † Includes 1 Georgia completion. ‡ Includes 2 Tennessee completions.

Oklahoma Fields

Carter County wildcat has good oil show in Hunton lime. Second producing horizon indicated in Coyle pool.

Tulsa.—Southern Oklahoma had a showing for a Hunton lime field, Noble 1 of Pure Oil Company, C NE SE 35-3s-1e, where plug will be drilled next week. The Carter County wildcat, north of Ardmore, is on the south side of the Arbuckle Mountains. It was drilled to Arbuckle lime, which tested salt water. After perforating the Tulip Creek formation casing was shot off and raised to top of the Hunton lime and got a fluid column of 1700 feet, 900 feet of which was oil. Bailing previous to cementing pipe failed to lower the fluid column.

Oil rose in the Carter County wildcat while pipe was being pulled, as lower tests had been dry. Evidently the 900 feet of oil at the bottom of a 1700-foot column of fluid was from Hunton lime, logged between 4638 and 4727 feet.

Previously the well had tested Arbuckle lime, 8485 feet, where 25,000 gallons of acid was used without success. Then the hole was plugged back and tests made in the Tulip Creek formation by perforations between 6479 and 6542 feet. This formation showed salt water.

After oil came into the hole June 14, casing was cemented at 4632 feet. Further testing will come after cement has set.

Southwest of the Sac and Fox pool, Lincoln County, Black Gold Refining Company, Lacquemont 1, NEc 28-14n-6e, has a showing in a sand between 3089 and 2123 feet. Further coring is in progress.

A west offset is ready to start drilling at the Hobart discovery, Kiowa County, by Shell Petroleum Corporation, Ratliff 1, SEc NE 19-7n-17w. The area also drew an outpost test last week, a mile southwest of the discovery well, as C. M. Beckett is ready to move in for Standerfer 1, NEc 25-7n-18w. A recent location for the area, Hagerling & Lawson's Bozeman 1, SEc NE 14-5n-17w, has been abandoned.

The discovery well, drilled by Gled Oil Company and Russell S. Tarr, got first production from Viola lime, 1055 feet, May 22. The flow of 70 to 100 barrels an hour, could not be brought under control and the well was killed so casing could be set and tubing run. Since then it has produced intermittently and has 7000 barrels total production to its credit. The output is being trucked to a refining plant at Grandfield.

One completion in the Ramsey field, Payne County, gave this Wilcox sand area its thirty-first flowing well. The Coyle pool, also in Payne County, had three wells ready for completion in the Wilcox sand.

Showings in the Hunton lime in three wells now ready for testing the First Wilcox sand indicated a second producing formation for this Payne County pool. The three wells ready to be drilled in are on the east side of the field. Fruin 2 of Stanolind Oil & Gas Company and Amerada Petroleum Corporation, C E½ SW NW 12-17n-1e, had saturation in the Hunton lime, top 4679 feet, has set 7-inch casing at 4781 feet and is ready to drill in. Magnolia Petroleum Company had oil in the Hunton lime between 4575 and 4628 feet and drilled to the Wilcox at 4825 feet. It flowed 320 barrels in the Wilcox sand while drilling to 4850 feet. The Texas Company passed through Hunton lime saturation in L. M. Graham 2, C E½ SW SW 12-17n-1e and set 7-inch casing at 4836 feet, from where it will be drilled in with cable tools. Completion of these wells will give the field 12 producers. Two locations were made last week: Magnolia Petroleum Company's Cain 4, C E½ NE SW 12-17n-1e, and The Texas Company's L. M. Graham 3, C E½ SW SW 12-17n-1e.

The Ramsey field, Payne County, drew its thirty-first producer last week, Wetzel 2, SE NE SE 13-18n-1e, completed by Mid-Continent Petroleum Corporation for potential of 7121 barrels in First Wilcox sand between 4788 and 4811 feet. This well is in the southwest corner of production and on the community block, which has 28 producing wells and no dry holes. Mid-Continent Petroleum Corporation has started 2 more wells on the 640 acre block, Brandon 5, SW NE NE 13-18n-1e, and Brandon 6, NEc 13-18n-1e. These are one location removed from producing wells at the northwest corner of the field.

The Grant County wildcat of Carter Oil Company, Staggers 1, C W½ SE NW 4-25n-3w, has been cored and drilled to 5326½ feet with only slight showings of oil and gas. This well had top of the Simpson dolomite 140 feet higher than the Lamont field, 2 miles south. Its depth from surface was 5227 feet and top of the First Wilcox sand at 5270 feet.

A half-mile west of the small Meridian pool, Logan County, H. F. Wilcox Oil & Gas Company has staked a wildcat, Parrish 1, NWc SW 26-16n-1w. Another Logan County wildcat, Miller 1, NWc SE 4-17n-4w, will be drilled by F. W. Cooper Drilling Company.

The Cleveland County wildcat of Nels Burton, Boggs 1, NEc SE 16-9n-2w, has reached First Wilcox sand at 7585 feet. It had slight oil stains in cores between 7442 and 7455 feet.

Grady County drew two wildcat tests. East of the Cement field, John B. Nichols will drill Bushnell 1, E½ SE 7-5n-8w. Stauffer Petroleum Company has made location for Smith 1, NWc NE 28-7n-8w, on a block of 8000 acres.

In the Doyle pool proper, Stephens County, Sunray Oil Company is deepening Effner 1, SEc NW 12-1n-5w, a west offset to the discovery well there. Recently the West Doyle pool found production at lower levels than the 2821 feet where this well has been producing.

Kingfisher County will get another Wilcox sand test by Anderson-Prichard Oil Corporation, whose location is Geis 1, C NE SW 15-8n-9w. The test of Ace Gutowsky et al, also in Kingfisher County, Lankford 1, NEc SE 34-17n-8w, is shut

Oklahoma Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Carter—		
Jones, Carter 7, nw sw nw ne 16-4s-3w	8	1389
Creek—		
Rufley et al, McMillan 1, ne se nw nw 26-18n-7e	¶1.5	521
Swift, Musselman 1, nw sw ne 18-18n-10e	235	2039
Midco, Wat-A-She 1, nec sw 29-18n-11e	*	2398
Garfield—		
Kerr-Lynn et al, Hein 1A, nw nwc 36-22n-4w	*	5042
Grady—		
McCasland, Horton 2, nw nwc sw 8-3n-5w	10	1962
Muskogee—		
Robinson, Brown 5, sw sw se ne 18-13n-16e	*	2130
Metzgar et al, Henry 12, 130 ft n cel nwc sw 1-14n-18e	*	1581
Parks, Hilderbrand 1, sw sw nw se 17-14n-19e	¶0.5	578
Hill, Adkins 1, c e½ se se 17-15n-18e	*	1685
Carolyn, Durham 1, se se sw nw 19-15n-18e	*	1465
Okfuskee—		
Wells, Scott 2A, nw nw sw ne 25-10n-11e	24	2130
Sivils, Holmes 1, sw sw ne ne 21-11n-11e	5	2745
Oklahoma—		
U. S. Pet., Sinapoula 2, sw se sw sw 15-12n-3w (OTD 6370 ft)	14	6450
Okmulgee—		
Eagle-Picher, Bullett 2, se se sw ne 27-12n-12e (Pb 2418 ft)	*	2703
Vincent et al, Johnson 1, nw nw se se 6-13n-11e (Pb 3236 ft)	¶2	3310
Sinclair-Prairie, Adams 5, sw se nw 14-15n-12e (otd 2623 ft)	*	2962
Dodge, Herrod 17, ne sw se se 17-15n-14e	4	825
Osage—		
Snyder 2, sec sw 13-26n-4e	*	Lcn.
Sinclair-Prairie, Burger "B" 14, N½ s½ ne se 17-21n-8e (otd 1784 ft)	20	2201
Payne—		
Mid-Continent et al, Graham 1, ne se se 13-18n-1e	5287	4867
Kirk-Green-Way, Kautz 1, nw sw se 6-18n-2e	*	4934
Hole et al, Cockran 2, c e½ se se 30-18n-5e (OTD 3212 ft)	25	2588
Pontotoc—		
Magnolia, Norris 12, sw swc ne 25-2n-6e	200	2642
Simpson et al, Wooley 8A, 100 ft n of sw nw sw 27-2n-7e (OTD 3527 ft)	5	3100
Simpson et al, Statler 2 se sw sw 34-2n-7e	48	1849
Chism et al, Chism 1, ne sw se 3-4n-7e	*	1185
Pottawatomie—		
Stephens, Copeland 1, sw nw nw 5-6n-5e	29	4243
Patterson, Edwards 1, se ne se se 28-6n-5e	240	2765
Berkey, Miller 1, nec 32-7n-4e	536	4282
Smith et al, Tartar 6, nwc sw 32-7n-5e	200	4109
Big Chief, Canfield 4, se sw sw 33-7n-5e	210	4175
Cooper, Strawn 1, sec sw 32-8n-5e.	*	4411
Smith et al, Collins 2, sec nw 4-5n-6e	*	3500
Seminole—		
Sunray, Cosar 1, swc ne 12-6n-5e (Salt water disposal well)		3170
Villines, Millsap 2, sw nw sw 23-7n-5e (Pb 4150 ft)	60	4210
Atlantic et al, Jimmey 1, se nw ne 21-7n-6e	200	4417
Atlantic, McCoy 1, se ne nw 21-7n-6e	900	4378
Malernee et al, Shelton 7, ne nw sw 33-7n-6e	100	2946
McQueen, McCann 1, sw se ne 33-7n-6e	70	2898
Moss, Harjo 1, c n½ sw ne 34-10n-6e	100	3764
Tulsa—		
Moore, Border 1, nw sw nw 26-18n-13e	¶1	840
Murray, Mason 1, se nec nw 21-19n-14e	*	1324
Wagoner—		
Curtis, McClair 1, ne sw ne ne 12-18n-17e (Pb 275 ft)	5	410
Hamilton et al, Life 1, nec se 29-18n-17e	¶0.8	1060

*Failures; †Junked; ¶Mil. cu. ft. gas.

down at 8330 feet. The well had top of the Second Wilcox sand at 8275 feet.

One of the deep tests in Washita County has reached its contract depth, 6000 feet, where Helmerich & Payne's Harms 1-A, C NW NE 6-10n-16w, has shut down. The hole may be taken deeper.

First difficulty in drilling the deepest well for Oklahoma came at 12,471 feet where Continental Oil Company freed stuck drill pipe in Proctor 1, C NW 27-10-20w, by circulating fluid. Drilling will be resumed after conditioning the hole and mud.

30 starts in Oklahoma

Tulsa.—During the past seven-day period Oklahoma completed 24 oil wells making a total initial potential of 8535 barrels. Five gas wells had an open-flow of 5,800,000 cubic feet while 13 of the completions resulted in dry holes. One location was abandoned and one well was completed for salt water disposal purposes. Thirty stakes were driven during the past week, Pontotoc County leading with 7, Muskogee and Pottawatomie 4 each, Okmulgee 3, Jackson and Creek 2, Caddo, Comanche, Grady, Kiowa, Okfuskee, Seminole, Osage and Kay 1 apiece.

Kansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton—		
Marylyn et al, Linsner 2, csl sw ne se 3-17s-13w	240	3395
Butler—		
Simpson et al, Evans 1, cwl sw se sw 21-28s-7e	*	3219
Chase—		
McCoy et al, Burns 1, se nw se 29-22s-6e	*	3065
Cowley—		
W. Kansas O&R, Furgeson 4, se ne sw 21-30s-8e	Abnd.	Lcn.
Barnett et al, Waite 2, 86 ft e ne sw nw 21-31s-4e	8623	3357
Ellis—		
Gulf, Mai 3, se sw se 14-11s-17w	8900	3375
Shell, Rumsey 17, nwc ne 23-11s-17w	28	3387
Grant—		
Columbian, McCall "A" 1, cwl nw ne sw 21-28s-36w	¶6.3	2745
McCall "B" 1, cwl nw ne sw 27-28s-36w	¶21.3	2737
Greenwood—		
Wideman, Lewis 1, 120 ft e swc ne 25-27s-8e	30	2428
Harvey—		
Garden et al, Lagree 1, sec 4-23s-3w (otd 280 ft)	*	3430
Johnson—		
Reid et al, Quintanze 1, sw swc nw 22-14s-22e	*	940
Sagamore, Knabe 1, ne nec nw 29-14s-22e	¶½	761
Marion—		
Wixon, Bucher-Fike 1, sec ne 28-17s-4e	Abnd.	Lcn.
Progressive, Nonken 1, ne sw sw 34-22s-4e	27	2156
McPherson—		
Westgate-Greenland et al, Eason 1, sw se nw 18-17s-1w	349	2684
Norton—		
Power, Van Patten 1, nec 26-4s-21w	200	3665
Reno—		
Westgate-Greenland, Johns 1, sec sw 25-22s-5w	850	3913
Sinclair Prairie, Schroeder 2, ne nw se 36-22s-5w	547	3925
Rice—		
Continental et al, Michels 3, nwc sw 12-18s-8w	725	3247
Skelly, Vokeland "B" 6, 100 ft e nw sw nw 5-18s-10w	4894	3216
Gulf, Nickols 1, csl nw sw ne 30-19s-9w	1080	3249
Handy 1, c e½ sec 25-19s-10w	354	3290
Herndon, McGlinn 1, c w½ sw sw 4-20s-9w	902	3257
Continental, Hamilton "A" 1, nw sw nw 19-18s-7w	2578	3183
Cities Service, Lewis 2, sec ne 11-18s-8w	1273	3243
Sinclair Prairie, Smith 2, sec ne 1-19s-8w	464	3275
Bishop, Cramm 1, nec sw 15-19s-9w	160	3223
Gulf, Callis 1, sec sw 28-19s-9w	175	3253
Bradley, Six 1, nw ne nw 27-19s-9w	Abnd.	Lcn.

Kansas Field Developments

New Russell County field near Atherton.

Extension showings for four fields.

Wichita.—Last week brought one new pool for Western Kansas, Russell County, where a showing 10 days earlier indicated production. The pool, only a mile north of Atherton, has been named Atherton North. Extension wells were showing for the Pawnee Rock pool, Rush County, the Burrton pool, Harvey County, the Zurich pool, Rooks County and the Barnholdt pool, McPherson County.

High yield of the Arbuckle lime in the Hittle pool, Cowley County, was demonstrated with a 22,000-barrel rating for its latest completion. This field, an old area for Layton sand production, has been defined on the east and west and indications are that it will not cover more than 800 acres.

A new pool designation, Atherton North, was given the discovery of Cities Service Oil Company, whose Dutt 1, NWc SE 18-13-14w, made potential of 240 barrels from 3134 feet in Arbuckle lime. It is less than a mile north of the Atherton pool, Russell County.

An extension to the southwest for the Coralena pool, Russell County, came with 810 barrels potential for Sellens 1, C N½ SW 17-15-13w, drilled to 3266 feet in Arbuckle lime by Carter Oil Company.

Early showing from the Arbuckle lime indicated a half-mile extension to the west for the Pawnee Rock pool, Rush County. Simpson Oil & Gas Company and Texon Oil Company had 1400 feet of oil in the hole in Nelson 1, NEc SE 14-20-16w, while drilling plug. Top of the lime was at 3777 feet and the hole was carried to 3801 feet. It will be given potential rating later.

A half-mile north of the old Burrton pool, Harvey County, J. A. Aylward and associates had a Chat showing in Wiley 1, C SL NE 18-23-3w. Top of the Chat was found at 3365 feet where tools were lost. It is likely that the well will be carried deeper after completing fish.

After deepening to 3164 feet, the Phillips County wildcat of Blue Stem Oil Company, Donaldson 1, SE NE NE 25-5-18w, had 1500 feet of oil in the hole. Last week the well was swabbing from 2108 feet to indicate a new pool 10 miles northeast of Faubian, Rooks County. The Kansas City lime will be acidized for a test.

Pipe has been set to test a showing a mile south of the Zurich pool, Rooks County. Web-Son Oil & Refining Company's Bair 1, SE NE NW 34-10-19w, set pipe at 3707 feet to test Arbuckle lime.

In Rice County, Nelson Drilling Company had sufficient showings in the Chat to warrant a test in Hodge 1, NWc NE 25-20-6w. Top of the Chat was at 3300 feet. Casing is being run. The well is 1½ miles northwest of the Barnholdt pool, McPherson County.

Another big well for the Hittle pool, Cowley County, drew an adjusted potential of 22,000 barrels. It is the Hartman & Blair's Waite 7, SW SE NW, which had top of the Arbuckle lime at 3341 feet and was drilled 3 feet into the formation. First calculations placed the initial estimate at 36,000 barrels but the 22,000 figure was adopted to make it the highest rated well in the field.

A Rice County wildcat, south of the Stumps field, Hemmer 1, NWc SE 16-18-10w, drilled by Phillips Petroleum Company, reached 3283 feet in Arbuckle lime without a showing.

Alex McCoy's Bernes 1, SE NW NE 29-22-6e, Chase County, had top of the Arbuckle lime at 3043 feet and drilled to 3065 feet to abandon.

The southeast extension well for the Barnholdt pool, McPherson County, drew potential rating of 770 barrels from Chat between 2290 and 2317 feet. Continental Oil Company drilled Mattson 1, C W½ NW 31-20-5w, into the Chat two weeks ago.

Company, Well and Location	Init. Prod Bbls.	Depth
Cities Service, DeWitt 3, nec 33-19s-9w	1166	3210
Phillips, Brandestine 1, c se nw 35-19s-10w	311	3306
Davis, Rosetta 1, nec nw 15-20s-9w	493	3226
Rooks—		
Broadview, Baxter 1, nw se nw 2-9s-16w	Abnd.	Lcn.
Russell—		
Lario et al, Mills 1, sw se sw 12-14s-15w	705	3062
Sinclair Prairie, Hefferman 3, nw sw ne 26-15s-13w (salt water disposal)		3517
Balloum, Mudd 1, nec 6-15s-14w	570	3180
Cities Service, Bender "A" 7, ne sw nw 25-15s-14w	4985	3314
Bridgeport, Mills 4, nw sw se 33-13s-15w	535	3302
Texon, Bunker Hill Bank 2, nw sw ne 26-14s-13w	1151	2917
Hall et al, Miller 14, ne sw se 30-14s-13w (otd 2345 ft)	1292	2925
Coralena, Sellens 4, se sw nw 29-15s-13w	48	3283
Deines 12, swc ne 36-15s-14w	48	3292
Darby, Michaels 12, nwc se 36-15s-14w	1258	3313
Sherman—		
Goodland Independent, Keeran 1, ne nec 30-8s-39w	¶0.1	1307
Stafford—		
Stanolind, Sims 2, cwl ne sw ne 11-24s-11w	4588	3726
Trigg Drilling et al, Teichmann 1, nw ne se 35-21s-12w	881	3435
Stanolind, Hayes 7, cwl sec 11-24s-11w	1556	3757
McComb 1, cwl se nw sw 12-24s-11w	865	3765
Woodson—		
Nye et al, Shaffer 6, ne sec sw 31-23s-14e	20	1574

* Failures; † Junked; ¶ Million cu. ft. gas.

Contract let for drilling Forrest Basin's first location

St. Joseph, Mo.—Contract has been let for drilling the Sullivan County test, Taylor 1, SW NW NE 12-62n-21w, first location made in the Forrest City Basin. H. V. Elwell, Wichita, erected derrick in October, 1939. The well is four miles west of Milan on a structure worked out by Marvin Lee, Wichita geologist. Kuhn Brothers, Wichita, have the contract, which calls for Arbuckle lime, anticipated around 1700 feet. Cable tools will be used.

Lario Oil & Gas Company, Wichita,

producing subsidiary of Globe Oil & Refining Company, Margay Oil Corporation and Skelly Oil Company, Tulsa, have taken interests in the 2500-acre block surrounding the well. Work is due to start before July 1.

Two other locations, neither of which has been added to the drilling report for the basin, were announced last week. In Bates County Patton Drilling Company is due to move in rig for Lee 1, SWc SE 11-39n-30w. In Buchanan County F. C. Miller, Wichita producer, has let contract for Cavanaugh 1, C SE SE 24-57n-35w, a cable-tool test to be drilled by Sam Murphy, also of Wichita.

These will give the Missouri side of the Forrest City Basin 20 tests. Of this total, 6 are drilling, 5 are shut down, 5 are rigs and 4 are locations.

A. & M. seniors get prize paper awards

In connection with the competition among senior students of the Petroleum Engineering Department of Texas Agricultural and Mechanical College, the following students have been awarded prizes:

Paper on Oil Well Cementing Equipment: First, Wm. A. Orth, Jr., second, J. A. Laird.

Paper on Oil Well Pumps: First, W. W. Pyeatt; second, H. H. Halsell.

Paper on Pumping Units: First, H. H. Halsell; second, Arch J. Greig.

Paper on Measurement of Liquids by Orifice Meters: First, D. B. McCorquodale; second, T. S. Clopton.

Paper on Compressor Stations: First, A. S. Shepherd.

Paper on Pressure Regulators in Gas Transmission: First, James Leroy Van Atten; second, Willis A. Teller.

Paper on Valves and Fittings for Pipe Line Service: First, Jean F. Devine; second, B. J. Curry.

Paper on Pipe Line Joints Other Than Welded: First, Wm. E. Lester; second, J. T. Ashford.

Paper on Lease Stock Tanks: First, not selected; second, Chas. E. Paggi.

Prime Movers for Pipe Line Pump Stations: First, J. V. Vick; second, A. T. Polanovitch.

Oil Metering: First, not selected; second, W. J. Hagner.

Sucker Rods: First, F. J. Adkisson, Jr.; second, T. S. Clopton (awarded last semester).

Fire Prevention Methods and Fire Fighting Equipment: First, Voscoe Acker; second, Horace R. Gowan.

Properties of Rotary Drilling Muds: First, W. G. North; second, E. A. Radack, (awarded last semester).

Treatment of Oil Field Emulsions: First, W. A. Russell; second, James T. Cannan.

Electric Welding of Pipe Lines: First, J. Burk; second, F. L. Wallace.

Protective Coatings for Pipe Lines: First, Wm. A. Orth; second, James L. Van Atten.

Placing of Acid in Oil Well Treatment: First, not selected; second, R. P. Dobyns.

Cash prizes of $25 for the best paper and $10 for the second best paper were given by a group of manufacturers of oil country equipment.

Illinois Developments

New field opened south of Centralia.

Clay City is enlarged to the west.

Half mile east extension for North Olney.

Olney, Ill.—Opening of a new basin sand pool in Jefferson County and important extensions to lime pools in Clay and Richland counties featured Illinois development activity last week. Irvin J. Vawter's Sarah Kell 1, NW SW NE 9-1n-1e, Grand Prairie Township, Jefferson County, after months of intermittent drilling, topped 12 feet of sand saturation at 2065 feet and later swabbed 70 barrels of oil in 12 hours. Not immediately identified, the formation is either the Benoist or Aux Vases. The strike is 6 miles south of Centralia, and elevation is 573 feet compared to approximately 500 feet in the Centralia area. Operators were undecided whether to shoot or to install pump.

Orchard Oil Company's M. C. Norton 1, Section 18-2n-8e, Clay City Township, Clay County, gauged 1000 barrels on its initial 24-hour test when completed in 10 feet of McClosky pay, topped at 3030 feet. It is west of production in the Clay City pool, where Pure Oil Company holds the major part of acreage and production.

Andrew et al's A. E. Wattleworth 1, SW SW SE 26-4n-10e, Olney Township, Richland County, flowed 300 barrels initial following acid treatment to provide a ½-mile southeastern extension to the North Olney pool. Production is from the McClosky, with bottom at 3132 feet. The only active operation in this area, Chas. Skinner et al's Sylvan Iris School 1, Section 23-4n-10e, was installing pump after acid treatment failed to make a flowing McClosky lime well. Bottom is at 3025 feet.

Gulf Oil Company's closely watched Washington County test ,the G. W. Baldwin 1, SE SE NW 4-1s-1w, 2½ miles northwest of Irvington, Irvington Township, topped the MClosky at 1698 feet, had an oil stain in a core taken between 1705 and 1712 feet, but subsequent coring failed to reveal any oil showing. It was drilling ahead at 1743 feet. This test is on a large block, and the structure is highly regarded.

Ohio Oil Company's R. A. Chapman 1, SW SW NW 13-4n-9e, northern outpost to the Noble-Denver double pay pool of Richland County, drilled through 16 feet of Cypress sand saturation to find the lower McClosky lime dry. It was drilling on to the St. Louis, and if satisfactory production is not found in that deep formation, will be plugged back to the Cypress.

Sun Oil Company's W. C. Ford 1, NW NE NE 18-5s-14w, Hawthorne Township, which cored a promising looking McClosky lime saturation several weeks ago and since has had water trouble, last week swabbed 90 barrels of fluid in 12 hours, of which 84 barrels were oil and 6 barrels were water. The percentage of water is dropping, and the well may be put on the pump. Bottom is at 3017 feet. In this county, J. B. Liggett's Matilda Hohn 1, NE NW SE 32-3s-14w, Gray Township, was shut down after acidizing the McClosky where there was a show of oil. Bottom is at 3020 feet.

In Clinton County, Whitcher Development Company's F. C. Monken 1, NE NE SE 3-1n-2w, Lake Township, cored 14 feet of Benoist saturation below 1301 feet. Casing was set and standard tools were being moved in to complete the wildcat. Nearby, Webb, Neal

Illinois Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bond County—		
Reisig & Quisenberry, M. F. Wilderman 1	*	2430
Clark County—		
Leatherman, Tyhurst 1	25	660
Clay County—		
Fred Kroger, Chaney 1	*	3007
Clinton County—		
W. C. McBride, Inc., Carson 7	45	1230
Coles County—		
W. R. Miller, Stull 1	*	825
McConnell 1	5	585
Edgar County—		
Rabe & Henderson's Sarah Wait 1	*	727
Fayette County—		
Carter, Helen Welker 2	266	1525
Darrell Durbin 1	236	1554
Pearl Durbin 1	209	1528
L. H. Heckert 2	24	1567
A. Miller 1	121	1504
Mary Welker 5	141	1509
Bob Fortner 1	90	1559
Bob Fortner 2	204	1604
Richard Larimore 8	273	1593
Nellie Wetmore 2	207	1540
Henry Lilly 2	29	1596
W. A. Eagleton 1	126	1590
Henry Tucker 1	480	1582
Winton Taylor 4	151	1587
Winton Taylor 5	*	1585
Orville Mills 1	810	1578
Orville Mills 2	492	1541
Katie Owens 1	180	1564
Jarvis Bros., Welker 5	290	1584
Whisenant et al's Smith 12	110	1600
Jasper County—		
G. J. Grier, T. O. Crause 1	*	3250
Marion County—		
Texas Co., V. Kalkbrenner 25	210	1993
C. E. Richardson 5	413	1753
J. O. Richardson 8	581	1761
W. Friedrich 7-B	112	1850
B. Hawkins 9	105	1805
L. Hawthorne 13	126	1804
L. Hawthorne 16	210	2058
L. Hawthorne 17	350	2068
L. Hawthorne 18	56	1857
E. L. Snider 5	350	2075
E. L. Snider 6	525	2066
M. Bryant 7	147	1887
C. Farthing 2	392	1871
E. Farthing 3B	252	1911
W. Sands 2	420	1874
Rockhill Oil Co., Foster 14	160	1915
Magnolia Petroleum Co., D. A. Shanafelt 17	888	2070
D. A. Shanafelt 21	480	2082
W. B. Young 17B	3600	2060
Ohio Oil Co., M. J. Young 5	75	1898
Mathew Young Heirs 11	110	1903
W. C. McBride, Inc., N. L. Lee 6	6000	2056
St. Clair County—		
A. F. Anding, Gutterman 1	*	....
Shelby County—		
Rex Developments, Inc., Oscar Odell 1	*	575
Wayne County—		
Pure Oil Co., Wm. G. McCracken 1A	533	3110
Butt Consolidated 1	1125	3140
Nanny Rogers 1	51	3096
H. H. Wienert, Inc., McPherson 1	281	3271
White County—		
Superior Oil Co., Fitton 1	*	3063

* Failures; † Junked; ¶ Million cu. ft. gas.

et al's W. Husman 1, NE NE SE 12-1n-2w, Lake Township, was drilling at 1000 feet, having resumed last week after a lengthy shutdown.

Conrey & Griffin staked Joint Stock Land Bank 1, in the SE NW NE 7-2s-4w, in one of the most highly regarded prospective oil areas in Plum Hill Township, Washington County. Materials were being moved in. These operators abandoned their Roy Malan 1, NE SW SW 24-1n-1w, Pope Township, Fayette County, after finding the Benoist, topped at 1423 feet, dry.

Menhall et al's Benoist 1, E NE NW 8-2n-1e, Sandoval Township, Marion County, was closely watched as it neared the Niagaran lime horizon where it was hoped it would confirm a deep pool opened several months ago. Casing had been set to 2900 feet, and cable tools were to be moved in for the last few feet before the expected lime pay. The first and only Niagaran lime production in the area was found by Southwestern Oil & Gas Company's Benoist 21, just 360 feet east of Menhall et al's test, which topped the formation at 2920 feet. The strike caused widespread excitement, and land prices skyrocketed. Two tests since undertaken in the area, however, were failures. The wells are in the old Sandoval pool, from where Benoist sand production has been taken for about 30 years.

With ground conditions favorable, the season's exploration and development program in the basin is in full swing. Wildcat operations are spread over 35 southern counties, extending from Champaign and Adams counties, 40 miles north of Mattoon, to the state's southern ridge of counties.

Illinois report shows 3181 wells in new fields

Urbana, Ill.—The Illinois Geological Survey last week reported 33 new oil pools and 1 gas field opened in the current development campaign. They are scattered in 14 southern counties, and all have been opened within the past 29 months.

Producing wells in new pools, according to the survey, total 3181. Dry holes drilled within one fourth mile of production in their development totaled 250, while 71 wells are currently drilling, 167 rigs are standing, 33 wells are rigging up and 26 locations are staked.

The active development campaign has been forcefully reflected in the state's rapidly mounting production. The yield of the state's wells last month totaled 6,573,000 barrels, bringing the total for the first 5 months of the current year to 26,247,000 barrels or 2,250,000 barrels more than the output for all of 1938. Production figures included the fixed output of 335,000 barrels monthly from 25 old pools in 6 southeastern counties.

The following summary shows, as of June 1, the number of producing wells, dry holes, drilling wells, rigs standing, rigs going up and new locations in each of the state's 34 new pools:

Bond County—Sorento pool, 1 producing well. Washing County—Cordes, 25 producing, 2 dry, 3 drilling, 5 rigs, 2 rigging up. Shelby County—Stewardson, 1 producing. Fayette County—Beecher City-Louden, 844 producing, 46 dry, 8 drilling, 65 rigs, 5 rigging up, 13 locations; St. James, 35 producing, 1 dry, 2 drilling, 2 rigs, 1 location. Marion County—Patoka, 104 producing, 20 dry; Lake Centralia-Salem, 914 producing, 37 dry, 32 drilling, 60 rigs, 11 rigging up, 2 locations; Tonti, 1 producing, 1 rig, 1 rigging up, 1 location.

Clinton County—Centralia, 550 producing, 41 dry, 2 rigs. Jefferson County—Dix, 46 producing, 1 rig, 1 location; Roaches, 4 producing; Marcoe, 2 producing, 1 drilling; Elk Prairie, 1 producing; Ina, 1 producing, 2 dry.

Coles County—Mattoon, 1 producing, 1 dry; Hutton, 2 producing, 1 drilling. Clay County—Flora, 14 producing, 5 dry, 1 rigging up; Iola, 1 producing, 2 dry, 1 rig. Clay and Wayne counties—Clay City, 276 producing, 18 dry, 5 drilling, 10 rigs, 3 rigging up, 1 location.

Richland County—Noble, 174 producing, 32 dry, 7 drilling, 6 rigs, 2 rigging up, 5 locations; Schnell, 4 producing, 5 dry; Olney, 34 producing, 11 dry, 1 drilling. Wayne County—Rinard, 1 producing, 2 dry; Cisne, 40 producing, 7 dry, 1 drilling, 1 rig, 3 rigging up; Boyleston, 7 producing, 1 dry, 1 drilling, 3 rigs, 2 rigging up; Aden, 4 producing, 2 dry; North Aden, 47 producing, 5 dry, 2 rigs, 1 rigging up; Enterprise, 18 producing, 2 dry, 4 drilling, 3 rigs, 1 rigging up, 2 locations; Mt. Erie, 1 producing; Barnhill, 2 producing, 1 dry, 2 drilling, 2 rigs; Golden Gate, 1 producing; Leech Township, 2 producing, 1 dry, 1 rigging up. Gallatin County—Junction, 1 producing, 1 dry; Lawrence County — Russellville, 22 gas wells, 5 dry holes, 3 drilling, 3 rigs.

Kentucky Fields

New fields indicated near Maceo, Daviess County. Abell outpost apparently misses McClosky lime.

Owensboro, Ky.—Hart, Hart & Williams' W. Ham Nantz 1, north of Maceo and ¾ mile from the Ohio river, indicated a new Daviess County pool when it encountered fair Jett sand saturation at 776 feet. Oil rose 70 feet in the hole when it was deepened 5 feet into the sand with cable tools. It will be shot. The wildcat, more than 6 miles from the nearest production which is in the new Abell McClosky lime pool to the southwest, was intended as a McClosky test, but it will be completed at its present depth if a test justifies expectations. The Jett is estimated at about 500 feet above the McClosky in this area, 13 miles east and north of here.

Two miles west of the Abell discovery, Snowden & McSweeney's Allen Reid 1 was coring at 1512 feet. It was almost 100 feet below the McClosky level at the Abell wells and, apparently having missed the McClosky, was coring for the stray formation that has been productive east of Thurston, 3 miles from the Reid location.

In the Spottsville area of Henderson County, Ralston & Sales' Annie Stewart 1, on the Green River, plugged back from 2100 to 1700 feet when a fishing job was unsuccessful, and was sidetracking the lost tools. It was drilling below 1800 feet at last report.

Skelly Oil Company's Shearn Coal Company 1, semi-wildcat in Muhlenberg County, made 12 barrels in 15 hours from the McClosky,. 1535 feet total depth, which was increased to 30 barrels in an 8-hour pumping test following treatment with 1000 gallons of acid.

In Hancock County near a McClosky test drilled in 1922 with an oil and gas show, Eldon Fulkerson et al's Thomas Jackson 1, 1 mile east of Pellville, was rigging up cable tools. Another new wildcat location is G. E. Fisher's J. M. Greenwell 1, Meade County. Drilling contract has been let to Sherman L. Hall, Owensboro, and it will be taken to 1600 feet. Geology of the area has been worked by Paul Farmer and Raymond Miller.

Three Hopkins County tests were commanding interest. Deepest was Phillips Petroleum Company's Parker 1, drilling below 4000 feet. Some Cypress sand saturation was drilled by W. F. Lacy's Bailey Whitsell 1, but it was continuing down below 2800 feet. Following a brief shut down for title work, M. B. Hughes' Bura Brown 1, near Dalton, resumed drilling below 1400 feet.

A new market for northwestern Kentucky operators was furnished with completion last week of the Tri-State Refinery at Spottsville, Henderson County. It is connected to the Blackwell pool by a 14-mile pipe line and has a capacity of 3000 barrels of crude daily. Initial operations will be at the rate of 1000 barrels daily, part of the oil to come from the Blackwell pool and part from Southern Indiana and Southern Illinois wells, transported to the refinery by railroad and river barge. Officers of the company are A. J. Slagter, president and general manager; F. B. Paulson, vice president; A. J. Slagter, Jr., secretary; and R. Hal Compton, treasurer.

Daviess County crude production dropped 13,000 barrels in April from the March output, according to records of County Court Clerk Henry M. Griffin. Pipe line companies serving county pools handled 39,956.81 barrels for

Kentucky Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Butler County—		
Vickers & Penrifoy, A. Gardner 1	*	171
Daviess County—		
Ohio Oil Co., Commes 3.....	75	....
W. E. Hupp et al, C. DeLacy 2...	*	1360
Walter Cameron et al, W. W. Davis 1	*	1705
Muhlenberg County—		
Skelly Oil Co., Shean Coal Co. 1..	90	1538
Ohio County—		
Vickers & White, Greer 3	10	601

*Failures; †Junked; ¶Mil. cu. ft. gas.

which producers were paid $41,822.52. The Producers Pipe Line Company took 16,509.24 barrels; Aetna Oil Service Company, 10,455.75 barrels; Owensboro-Ashland Company, 9,042.96 barrels; and R. Hal Compton Crude Oil Purchasing Company, 3,948.81 barrels.

In a blanket assignment covering 219 Henderson County oil and gas leases on 24,422.18 acres, the Kentucky Natural Gas Company conveyed a one-half working interest to Sun Oil Company.

New York Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegany County—		
J. A. Bucher, Hamsher farm, Bolivar	3	1045
Forest Oil Co., Ackerman farm, Bolivar	15	1395
Ackerman farm, Bolivar	12	1382
Ackerman farm, Bolivar	10	1387
Ackerman farm, Bolivar	12	1373
Pure Penn Pet. Corp., Christman farm, Bolivar	5	1436
Allegany: Water Intake Wells		
W. J. Richardson Est. No. 3, Gadsby farm, Alma	...	1425
Forest Oil Co., Ackerman farm, Bolivar	...	1360
Forest Oil Co., Ackerman farm, Bolivar	...	1370
Forest Oil Co., Ackerman farm, Bolivar	...	1382
Forest Oil Co., Ackerman farm, Bolivar	...	1369

Ohio Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Athens County—		
A. D. Townsend, C. M. Weatherley 2	¶.10	1661
G. & K. Oil Co., P. W. Brosvenor 2	1	495
Gibson et al, A. Kinney 1	*	1100
Cuyahoga County—		
Benedum-Trees, Parr 1	¶2.80	2786
Licking County—		
L. W. Patton et al, P. O. & Daisy Wright 3	5	775
Hoover Bros., G. Pounds 1	¶.96	2605
Medina County—		
Dymo Oil Corp., W. H. Ripley 3	10	544
W. H. Ripley 5	10	573
W. H. Ripley 13	10	585
W. H. Ripley 19	10	555
Muskingum County —		
Thistle Oil Co., Duker 10	3	980
Ellis Coal Co., L. A. Miller 1	¶.10	3656
Perry County—		
Kissling Drilling Co., Metzgar 1	*	918
Tuscarawas County—		
Brendel Producing Co., Columbia Fire Clay 2	¶1.77	4820
Washington County—		
C. A. Fogle et al, B. B. Putnam 1	17	297

Pennsylvania Completions

Bradford District

Rew Oil Co., 380-1 Bing	2	....
Andrus & MacDowell, 329 Bing	2	....
Messer Oil Corp., Redfield	10	....
Tapp, Gallets & Buffington, Trs., Fee	3	....
Forest Oil Corp., 3 wells	3	....
Forest Petroleum Corp., 4 wells	4	....
Niagara Oil Corp., 7 wells	7	....
Bradford Transit Co., 9 wells	9	....
Bradford: Water Intake Wells		
Grant & Mohan Oil Co., No. 3, 485-5 Bing	...	....
R. E. Hungiville No. 2, 299-300 Bing	...	....
Forest Oil Corp.	...	....
Forest Petroleum Corp.	...	....
Niagara Oil Corp., 3 wells	...	....
Butler-Armstrong District		
H. G. Dunlap, Hoch	1½	....
Middle District		
Dale Grant Gas Co., B. F. Songer	¶	....
Case Pomeroy & Co., Lot 89	1	....
New York-Pennsylvania Gas Field		
New Penn Dev. Co., Gorton-Kemp	*	....
Armstrong County—		
T. W. Phillips G&O Co., Harkleroad 1	¶7.50	3505
Greene County—		
McNichols & Co., McNichols 3	¶	3300
Eddy & Johnson, Maple 2	¶.22	3165
Washington County—		
Carnegie Nat. Gas Co., Booth 1	¶.05	2740
Westmoreland County—		
Peoples Nat. Gas Co., Masters 1	¶	3610

*Failures; †Junked; ¶Mil. cu. ft. gas.

Indiana Developments

Griffin field extended two miles east.

Posey wildcat testing McClosky zone.

Evansville, Ind.—W. F. Lacy's George Heston 1, NW SW NE 8-3s-13w, Wabash Township, extended the Griffin pool of Gibson County 2 miles east when it was completed in the McClosky lime at 2883 feet. Following treatment with 1000 gallons of acid, it cleaned itself out and on a test yielded 175 barrels in three hours through a half-inch choke. On a later test it flowed at 45 barrels an hour through a half-inch choke. The outpost is three miles from the pool's discovery and will spur activity in this area, the most promising pool opened in the Indiana section of the basin during the current development campaign.

South and west of the Heston outpost, Gwin Drilling Company's W. L. Skiles et al 1, NW SW NE 18-3s-13w, in the area between the new wells and the pool proper, was rigging up.

Superior Oil Company's New Harmony Realty Corporation 1, NW NW SW 10-5s 14w, Harmony Township, Posey County, wildcat on Ribeyre Island, set a drillable liner opposite the Waltersburg sand between 2180 and 2221 feet before casing to the McClosky, between 2965 and 2985 feet, total depth. At last report, it was swabbing after a 1000 gallon acid treatment in the lime and making half oil and half salt water with only 500 feet of fluid in the hole. It will likely be drilled out at the Waltersburg for a test of this sand formation.

Elson Oil Company and Gled Oil Company were moving in rotary equipment for Park Land 1, NW C SE 14-6s-11w, in the city of Evansville, Vanderburgh County. A special act of the recent Indiana legislature was necessary before the city could lease its park land for oil exploration, and operators have some 1400 acres under lease in the area. Other holders of nearby acreage are the Gulf Oil Corporation and Sun Oil Company. On a surface high, nearest production is six miles southwest in the Heuslar pool of Posey County. No definite depth has been set for the wildcat. Zephyr Drilling Company has the contract.

In Gibson County, near Mackey, Al J. Walker and Bruce Martin's Oscar Schmidt 2, SE SE SW 13-3s-9w, Barton Township, was drilling at 600 feet with the Pennsylvanian sand at about 950 feet as its goal. The first try on this lease was dry in the McClosky, between 1750 and 1756 feet, 1847 feet total depth, and the shallow test was started on the basis of an electric test of the first wildcat. In this same township, Midwest Development Corporation's Corn 1, Section 14-3s-9w, had casing set to the top of the McClosky at 1609 feet, while its Claude E. and Vica Beatty 1, NE SE NW 15-2s-9w, Columbia Township, Gibson County, was drilling at 1200 feet.

Midwest Development Corp.'s George W. Kiefner 1, NW NE NW 2-2n-5w, Barr Township, Daviess County, was shut down for orders at 3129 feet, and this operator's I. Ward Frey 1, SE SE SW 11-2n-11w, Vincennes Township, Knox County, was drilling at 1200 feet.

The play in eastern Black and western Marrs townships of Posey County was given new impetus when Gulf Refining Company announced location for J. Pfeiffer 1, N½ NW NW 13-6s-13w, eastern Black Township, about 1 mile northeast of Buffin and northwest of Hayes & Thomas Drilling Company's Walter Seifert 1, NW SE 19-6s-12w, eastern Marrs Township, which is making about 4,000,000 cubic feet of gas a day from 396 feet. This well had previously encountered an oil show at 325 feet.

In the Heusler Dome pool of Posey County, Illind Oil Company's Charles Strueh 2 (Sophie Scheussler et al 2), had casing set after coring good saturation in the Waltersburg and Jett sands. The No. 1 on this lease was completed a week ago as the largest well in this pool with an estimated production of between 300 and 500 barrels daily. In the same area, Sun Oil Company's John J. Heil 2, SE SE 1-7s-12w, indicated another multiple producer from the Waltersburg and Jett sands. Casing was set to the Jett at a total depth of 1819 feet, with casing of aluminum alloy opposite the Waltersburg.

North 1½ miles of the Rockport Gas field discovery, Damron Brothers were moving in on the S. Q. Snyder lease, SW SW NW 8-7s-6w, 3 miles northwest of Rockport, Spencer County. These operators now have five rigs working in this field.

Indiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Blackford County—		
A. S. Reed et al, Peter Cale 1-A	*	3300
Gibson County—		
W. F. Lacy, Geo. Heston 1	1200	2883
Indiana Oil Producers, Inc., Harris & Barr 14	10	905
United Oil Corp., Wm. M. Mason 1	*	1663
Harrison County—		
Indiana Utilities Corp., Brown 2	¶	784
Knox County—		
Michel Bros. Co., H. Decker Sr. 1	*	2081
Spencer County—		
A. A. Douglas, S. Schumacher 1	*	1544
Sullivan County—		
Hawaiian American Exploration Co., M. & J. Frakes 1	*	2515
Vanderburg County—		
Vanderburgh Oil Corp., Geo. W. Hornby 10-38	20	927
Ansel Douglas et al (H. J. Baker), Wm. Peters 1	*	1120
Warrick County—		
Arthur Grewe et al, J. S. Brammer 1	50	1960

West Virginia Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Cabel County—		
United Fuel Gas Co., W. Creamens 4833	¶.44	3462
Calhoun County—		
Four-Way Oil Co., Harris 1	15	2185
Jackson County—		
Everett Starcher et al, G. F. Boggess 1	¶1.38	5159
Ritchie County—		
M & Y Oil Co., McGinnis 4	*	1975
Roane County—		
C. W. Hickman, Anderson 2	¶.03	1057
Wayne County—		
R. J. Petry, R. W. Ramey -	¶.40	3085

*Failures; †Junked; ¶Mil. cu. ft. gas.

North Texas Fields

Prolific well opens new pool in northwest Young County.

Shows encourage deep drilling campaign in Clay County.

Wichita Falls.—Northwest Young County gained a deep lime oil pool when Carl Leidecker and Bryson Oil & Gas Company's J. M. Nall 1, SWc Section 1997, TE&L Company Survey, half mile west of Loving, responded to acid treatment of saturated zone at 4425-65 feet with a prolific flow. The well flowed 900 barrels of oil and acid water the first 12 hours after using 5000 gallons of acid at a maximum pressure of 800 pounds. It was shut in for 36 hours, then gauged 159 barrels of oil in 30 minutes, flowing through open tubing. Casing pressure dropped from 1750 to 1100 pounds on the short test. Nall 1 is located on an 800-acre block, and is 4 miles northwest of nearest deep production.

Deep prospecting in Clay County remained in the spotlight due to oil shows encountered by several important tests, but none gave positive assurance of commercial production. Another wildcat was added when Staley Oil Company made location for the immediate drilling of D. J. Percifield 1, SEc Block 37, T. J. Belcher Subdivision. Location is 5½ miles northeast of the Burns-Browning area. L. T. Burns and Consolidated Oil Company's Scaling 1, SEc HT&B Section 6, 1.8 miles northwest of the Burns-Browning discovery, is expected to make a small producer at 4545 feet. Broken Strawn saturation at 4448-64 yielded several heads of oil following 60-quart nitro shot. The hole bridged before an estimate could be made of the production. Three wildcats logged oil shows above their projected producing zones. J. E. Farrell et al's Malone 1, NEc T&NO Section 12, passed up minor oil saturation at 3948-63 feet, and was drilling at 3990 feet.

Frabor-Hodges Corporation-Sinclair Prairie Oil Company et al's Kinder 1, NEc Lot 11, Block 2, western Clay County, is considered a contender for lower Strawn production, having registered small oil shows on drill-stem tests at 3685-3705 feet and 4137-66 feet. It was drilling at 4350 feet. L. T. Burns et al's Wynn 1, Lot 34, H. Williams Survey, 4.6 miles southeast of the Burns-Browning pool, made 3 unsuccessful attempts to use formation tester in broken sand and sandy-shale at 4397-4655 feet, and was drilling at 4850 feet.

Two new wildcats are in store for non-producing counties on the west side of the North Texas district. Magnolia Petroleum Company is moving in heavy rotary to drill Alice Green 1, 330 feet from north and 542 feet from east and west lines of 120-acre lease, John M. Grogan Survey, Cottle County. It is 10 miles southwest of Goodlet. Amerada Petroleum Corporation authorized the initial test for its geophysical prospect in Hardeman County. Location was scheduled to be announced late last week.

Two Deep Tests at Walnut Bend

Search for deeper production in the Walnut Bend pool, Cooke County, is being conducted by Sinclair Prairie Oil Company with two tests that passed up commercial production in the Strawn. J. M. Best 10, situated on the southeast edge of the area, was coring sandy-lime at 5560 feet, logging oil saturation at intervals. It will continue to the Ellenberger. Formation tester used in Simpson at 5330-5401 feet yielded 2400 feet of 32.6 gravity oil in 30 minutes. The company's Putnam 1, dry hole on the northwest edge of production, logged only 240 feet of Simpson, topped at 5209 feet, and found sulphur water in the upper section of the Ellenberger, topped at 5449 feet. J. M. Best 11 was coring at 5040 feet, having passed up the regular oil level at 4932 feet. Ed Cox and Jake Hamon's K. Neu-The Texas Company 1, east extension, gauged 111 barrels of oil natural in 6 hours for completion. It was drilled to 5133 feet, then gun-perforated casing at 4900-25 feet.

The Nocona deep area, Montague County, added its second natural-flowing well and has a third test ready to complete. Rogers & Rogers' C. Astley-The Texas Company 1, north offset to their discovery, flowed 113 barrels of oil in 11 hours, and later tested 124 barrels of oil in 12 hours. Production is from perforations opposite the Strawn at 4649-62 feet. This well was plugged back after testing water in Ellenberger at 5394-5489 feet. Stanolind Oil & Gas Company's Zachary 1, west offset to the discovery, was running tubing to test at 4661 feet after cementing 7-inch casing on top of the saturated zone at 4634 feet. Bridwell Oil Company's Reynolds 1, SWc E. T. Ry. Section 9, mile northeast of Nocona townsite, failed to produce in the Strawn series, and was drilling at 5310 feet with the Ellenberger as objective. Sinclair Prairie Oil Company's Whaley 1, 2 miles east of town, cemented surface pipe at 636 feet. Cordova-Union Oil Corporation et al's R. L. Cable 1, wildcat and 5 miles southwest of St. Jo, was abandoned at 4550 feet in shale.

Deep penetration of the Ellenberger series has been made by Sinclair Prairie Oil Company's M. M. Williams 1, western Grayson County prospect and 1½ miles southwest of production in the Collinsville pool. Top of Ellenberger was called at 4055 feet, and the test was drilling at 4420 feet. John Gray et al's Wm. Freeman 1, Grayson County wildcat, has cemented 5-3/16-inch pipe at 1380 feet to test show of oil in lime at 1380-88 feet and in the Ellenberger at 1393-1400 feet.

G. E. Kadane & Sons' Joe Hammi 1, NEc Section 60, Block 3, eastern Archer County wildcat, developed a small show of gas while cleaning out following two acid treatments of oil saturated lime at 5174-5290 feet. The hole was plugged back from 5314 feet to 5294 feet. W. B. Omohondro et al's A. B. Peckham 1, near NWc H&TC Section 22, Block 1, half-mile southwest of the McCrory pool 4760-foot pumper, Archer County, was drilling at 4710 feet.

Texas Panhandle Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Carson County—		
Sinclair Prairie, Cooper 16	270	3147
Gray County—		
Continental, Benton 4	426	3297
Hagy-Harrington & Marsh, Benedict 1	¶20.4	2715
Sunray Oil Co., Lovett 3	286	3167
Texas Co., Shaw 6	821	2775
Hutchinson County—		
Buck Oil Co., Jameson 1	430	2884
Huber Pet. Co., Herring 10	¶5.5	3100
Phillips, Gary-Whittenburg 9	101	3242
Moore County—		
Texoma Nat. Gas Co., Sneed 22	¶23.9	3144
Potter County—		
Canadian River Gas Co., Bivins 25-A	¶23.2	3050

*Failures; †Junked; ¶Mil. cu. ft. gas.

North Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County—		
Bridwell Oil Co., Bridwell 3	35	941
Brown et al, Perkins 1-C, blk 21	10	1004
Cable Oil Co., Powell 1	12	993
Hodges et al, T. L. Griffin 21-A, sec 1600	12	1300
Clay County—		
Gannaway et al, Stephenson-Texas Co. 5, blk 3	3	243
Norwood et al, Duncan-Texas Co. 3, blk 15	80	1183
Cooke County—		
Texas Co., Truebenbach 18, blk 7	26	762
Jack County—		
Danciger, Ivey 8	612	3138
Gilmore et al, Hanna 9, sec 3318	*	520
Harper & Knappenberger, Jones 1	354	3244
Hitchcock & Whitsett, Fenter 1	*	318
Montague County (Wildcat)—		
Cordova Union Oil Corp.-Gillespie, Cable 1	*	4550
Wichita County (K-M-A)—		
Bolin et al, Preston 5, sec 20	504	4002
Fain-McGaha Oil Corp., Griffin 2-A, blk 3	107	3835
J. E. Farrell & Co., Bradley 1	70	3959
Harwell et al, First Nat'l Co. 2-D, blk 44	248	3925
Hunter et al, Waggoner Bros. 45-A	80	3856
King Oil Co.-Perkins-Cullum, Bradley 1	824	3795
Ferguson 7, lot 6	896	3785
Chas. Pettit 17	752	3752
Chas. Pettit 18	688	3731
Omohundro et al, Love 1	1056	4044
Wichita County—		
Bell O&G Co., Powell 39	12	1241
Clark et al, Perkins 1	*	1952
E. C. Oil Co., Burnside 3-C	8	3118
Howell et al, Foster-Allen 1, sec 1	*	942
Kimbell & Bostic, Daniels 7-A	5	1335
Krohn et al, Jennings 6, sec 12	*	826
Mitchell Oil Co., Mitchell 5-C, blk 11	*	1398
Mitchell & Buzzard, Mitchell 14, blk 4	*	1445
Reed & Crenshaw, First Nat'l Co. 15-B, blk 26	14	1647
Wilbarger County—		
Davis & Beasley, Davis 1	†	1075
King Oil Co., Waggoner Est. 24-C	2	1125
W. T. Waggoner Estate, fee 1-FF, sec 63	240	3231
Wise County (Wildcat)—		
Gregg et al, Luttrell 1	*	295
Young County—		
Grove et al, E. Barrett 5	6	580
Horwitz & Oldom, Taack 8, sec 263	*	691
Kleiner et al, McKinley 32, sec 1489	*	601
Meyer et al, Prideaux 3	*	580
Sparks & Hansen, Hamilton 7-A, sec 3401	15	890
Underwood Drl. Co., Campbell 43-C, sec 3401	*	902
West & Stanford, Williams 2	12	567
Willis et al, Webb 2, blk 1	*	802

*Failures; †Junked; ¶Mil. cu. ft. gas.

West Texas Fields

Schleicher County wildcat flows 65 barrels on initial test.

Small oil showing may mean a new field in Ector County.

San Angelo, Texas—Schleicher County was added to the list of oil producing counties in West Texas last midweek when Lone Star Gasoline Company's Bert Page-Humble 1, near C NW NE GH&SA Section 30, Block L, flowed 65 barrels of 38 gravity oil natural through tubing in 24 hours. Production is from the lower Pennsylvanian at 5727-30 feet and 5741-46 feet, with an elevation of 2401 feet. It is located ⅞ mile southeast of the largest of two gas-distillate producers in the 5500-foot Strawn which proved barren of oil, gas or water in drilling the oil discovery. The above company's Page-Shell 1, ¼ mile northeast of gas-distillate production, was drilling with rotary at 5545 feet, and will continue to the 5700-foot pay.

Harold B. Opp, West Texas rancher engaged in his first oil prospecting, developed an oil show at 4049 feet in drilling J. T. Jackson 1, NW NE T. C. Ry. Section 41, Block LL, 4 miles northwest of Eldorado. This Schleicher County wildcat is southeast of several failures that passed up small amount of free oil near the same horizon. Pipe may be run before deepening Jackson 1.

Gulf Oil Corporation's Holt 1, SE SE SW PSL Section 1, Block A, prospective deep lime discovery for the northwest edge of the North Cowden field, Ector County, encountered small yield of sulphur water at 5187-5200 feet after logging 39 feet of saturation in the lower Permian. Holt 1 produces approximately 50 barrels of 38-39 gravity oil daily when swabbed down to the 7-inch casing seat at 4080 feet. The new pay for the county was encountered at 5148 feet, with an elevation of 3091 feet, and will likely be explored in other Ector County fields when conditions warrant. Holt 1 is expected to qualify as a commercial producer after the bottom hole water is excluded, and the saturated zone is acidized.

Substantial gain in drilling operations are in store for the Foster field, which has recently recorded important extensions to the east and northeast. York & Harper et al have authorized 12 additional tests for Foster B, C and D leases, T&P Section 8, Block 42, T-2-S. M-B-K Drilling Company et al made locations for 11 additional tests to be drilled on their Foster and Gist leases in Sections 8 and 9. The latter is reported to have given a major company an option recently to acquire a substantial interest in properties held in Ector and Gaines counties.

A small amount of free oil encountered by a wildcat in western Ector County may be the forerunner of the development of a new pool. J. T. Barnes-Conkling & White's Thomas 1, near northeast corner of SW NW T&P Section 28, Block 45, T-1-S, yielded a few bailers of live oil from saturated lime at 4334-52 feet, with an elevation of 3277 feet. No increase was recorded in drilling to 4500 feet. Thomas 1 is 5½ miles southwest of the Goldsmith field, and is about two miles removed from dry holes to the northeast, east and southwest. Territory to the northwest and extending across the line into Winkler County has been an active leasing center the past two months, with cash bonuses ranging from $7.50 to $10.

Gaines County gained a new wildcat project and recorded a failure. Stanolind Oil & Gas Company has made location for J. B. Rayner 1, C SW SW PSL Section 3, Block C-30, near the center of its Cedar Lake geophysical prospect in the northeast corner of the county. The Cedar Lake structure is blanketed with leases by large interests,

SOUTHERN

PUMPING UNITS
FOR CRUDE OIL OR REFINED LIQUIDS
- Pumps are either Rotary or Centrifugal.
- Motors are either Gas, Gasoline, Diesel, or Electric.
- Capacities from 50 to 500 barrels per hour.

SOUTHERN ENGINE & PUMP COMPANY
HOUSTON, DALLAS & KILGORE, TEXAS

West Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Andrews County (Fuhrman)—		
Fuhrman Pet. Corp., Ford 17	1098	4470
Crane County (Gulf-Waddell)—		
Gulf, Waddell 26	13,640	3537
Ector County (Foster)—		
Stanolind, Cowden 13-A	1114	4194
Witcher 15	1088	4200
Ector County (Goldsmith)—		
Gulf, Goldsmith 175	¶11.7 & 55	4211
Goldsmith 178	44	4255
Goldsmith 190	44	4194
Goldsmith 195	2195	4215
Ector County (Jordan)—		
Atlantic Ref. Co.-Skelly, University 6-C	2421	3650
Ector County (North Cowden)—		
Sun Oil Co., Wight 4-C	481	4197
Gaines County (Wildcat)—		
Humble, Caswell 1	*	5002
Hockley County (Slaughter)—		
Honolulu Oil Corp., Slaughter 1-A-4	1253	4960
T. P. Coal & Oil Co., Lauhoff 1	698	4996
Western States Gasoline Corp., Coors-Humble 1	1266	5004
Howard County—		
Magnolia, M. H. O'Daniel 6	264	2816
M. E. Ooley & McQuain, Snyder 1	*	3149
Jones County—		
Danciger O&R, Inc., Roberts 6	282	1928
Fain-McGaha Oil Corp.-Sinclair Prairie, Olson 4	1180	3230
Swedish Church 3	1952	3234
Bert Fields-Carey King, Taylor 4	1600	3260
Humphrey 1-C	*	3255
Humble, R. Graves 2	†	3012
I. N. Irwin 3	28	2957
Iron Mt. Oil Co.-Humble, Davis 2	6240	3256
W. H. Peckham et al, Brock 4	475	1894
G. Smith et al, Cox-Hamilton 1	4460	3271
Cox-Hamilton 2	3960	3263
Ungren-Frazier et al, Griffin 6	665	3267
Jones County (Wildcat)—		
Healey Drl. Co. et al, Steele 1	*	3060
Pecos County (Shearer)—		
Childress Roy. Co., Shearer-Humble 2	47	1505
Sahara Oil Corp., Shearer-Atlantic 6	251	1505
Pecos County (Torborg)—		
R. H. Henderson et al, Tippett-Conoco 1-C	40	459
Pecos County (Wildcat)—		
Mid-Western Pet. Corp., Mattei 1	*	160
Scurry County (Sharon)—		
Coffield & Guthrie, Inc., First Nat'l Bank (Snyder) 2	147	2420
First Nat'l Bank (Snyder) 1-B (air well)	*	1320
Taylor County (Wildcat)—		
D. H. Bolin et al, M. Neill 1	*	2502
Taylor County (Bowles)—		
W. J. Murray et al, Joe Evans 1	40	1752
Tom Green County (Wildcat)—		
Lynn & Cobb, Cox 1	*	368
Roush & Stuard, Pugh 1	*	196
Upton County (McCamey)—		
Anderson-Prichard Oil Corp., Burleson 2	218	2212
Harvey-Sergent & Rutter, Cordova Union-Texas Co. 5-A	110	2305
Ward County—		
Buffington & Smith, Samuels 1	†	1987
Columbia O&G Co., Johnson 4-C	59	2093
Standard of Texas, L. Adams 12	120	2650
Western Well Service Corp., Lackland 10	164	2084
Winkler County (Hendrick)—		
Stanolind-Westbrook-Thompson, Hendrick 1-E-T-88	101	2718
Yoakum County (Bennett)—		
Devonian Oil Co., Hodges 4	974	5226
Honolulu Oil Corp.-Cascade, Willard 3-741	1087	5210
Yoakum County (Wasson)—		
Aloco Oil Co., Elliott-Texas Co. 1	216	5213
G. R. White-Texas Co. 2	684	5191
Dan Danvers et al, Clawater-Amerada 2	729	5175
Devonian Oil Co., L. K. Ory 1	1009	5135
Phillips Drl. Co., Dowden 1	484	5051
Skelly Oil Co., Thomas 4	1114	5150

* Failures; † Junked; ¶ Million cu. ft. gas.

and royalty has commanded substantial prices for several years.

Humble Oil & Refining Company's Caswell 1, C SW SW PSL Section 10, Block A-24, was ordered plugged after testing sulphur water with a small amount of free oil at 5002 feet.

In eastern Crane County, P. A. Christian et al's Stephenson 1, Crane townsite area, logged show of oil at 3145 feet and 3170-75 feet. No additional shows were reported in drilling to 3220 feet.

The Wasson field, situated on the Yoakum-Gaines county line, is experiencing a steady gain in activity due to competitive drilling and lease requirements. Aloco Oil Company is operating the most rigs and is exempt from pipe line proration through having its own pipe line outlet. Another major company was concluding arrangements late last week to farm out its entire acreage and four completed wells to an independent producer and drilling contractor since its properties are beyond reach of its own pipe line facilities. Aloco Oil Company's White 2, located on the north end of the field, registered a potential of 684 barrels through 50/64-inch choke after using 1500 gallons of acid at 5191 feet. It is on a lease farmed out by The Texas Company.

Phillips to process sweet gas at Eliasville

The Texas Railroad Commission has entered an order permitting Phillips Petroleum Company to commingle dry sweet gas with casinghead gas and to process such commingled gas in its Eliasville plant, Stephens County. Production is from the company's Talbott and Gilmore wells in TE&L Survey, No. 1031, Stephens County.

The order provides that the company must market for light and fuel purposes an amount of residue gas equivalent to the amount of sweet gas inducted into the plant less extraction loss.

East Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
Overton Ref. Co. (was Corbin et al), Alford 2	240	3570
Kilgore Area—		
Arkansas F. O. Co., Jernigan 14	5600	3800
Cities Service, Walker 13 (152.21-ac)	900	3603
Magnolia, Griffin 21 (44.6-ac)	240	3606
Shell, Watson 90 (385.2-ac)	7500	3635
Longview Area—		
Magnolia, White 25 (80-ac)	7200	3525
Margay Oil Co., Corbin 12 (55-ac)	8000	3580
Pickens et al, Hoyt 5 (21-ac)	3500	3543
Stanolind-Tide Water, McGeorge 18 (95.8-ac)	7000	3491
Angelina County—		
Ginter Co., Copes 5	5	2193
Camp County (Wildcat)—		
H. S. Moss et al, W. D. Keeling 1	*	4552
Freestone County (Wildcat)—		
W. B. Johnson Drl. Co., D. O. Nettles 1	*	3705
Houston County (Navarro Crossing)—		
Humble, H. H. Dailey 3 (1002-ac)	24	5893
Kaufman County (Wildcat)—		
Atwood-Glaspy et al, fee 1	*	3925
Navarro County (Wildcat)—		
W. H. Strong et al, E. Jackson 1	*	2010
Titus County (Talco)—		
Humble, Sallie Blalock 1	312	4328
Magnolia, Chapman 4 (341¾-ac)	246	4328
Marion County (Wildcat)—		
Fitzwater et al, Terry 1, Wiley Coor sur	25	2318
Marion County (Rodessa-Jefferson)—		
Texas Co., Chatten 4, W. R. Meyers sur	912	5982

*Failures; †Junked; ¶Mil. cu. ft. gas.

Saves WIRE LINES

The Grizzly "No-Wip" Line Saver protects life and property while saving thousands of dollars of wire lines every year. Not a rigid line guide, it can be suspended at any point in the rig; hangs free and functions perfectly at any angle or height, regardless of how installed. Eliminates whipping, and the usual bow and whip due to momentum when pulling up an empty block and elevator. Forces line to track perfectly; eliminates piling up; simplifies spooling. Ask your supply dealer or write for Bulletin No. 10-OF.

E. M. SMITH COMPANY
600-650 South Clarence Street, • Los Angeles, California, U. S. A.
Complete Stocks Maintained in Our Warehouses At: 1121 Rothwell St., Section 16, Houston, Texas. 1008 S. E. 29th Street, Oklahoma City, Okla. Export Office: Continental Emsco Co., 30 Rockefeller Plaza, New York, N. Y. Distributed By Leading Supply Companies.

GRIZZLY "No-Wip" LINE SAVER

Representatives for Manufacturers Wanted

From time to time The OIL WEEKLY is requested by manufacturers to suggest possible sales representatives. Sometimes the manufacturer is looking for a sales company to represent it in a particular area. Occasionally the manufacturer desires that we suggest a salesman for an area.

To handle these requests we maintain what we call a "representation file."

If you are handling a line of oil country equipment and desire to add to that line, we shall be pleased, upon application, to provide you with one of our standard forms to be filled out and placed in this "representation file."

ADDRESS

The OIL WEEKLY, Box 2811, Houston, Texas

Attention Service Department

Southwest Texas Fields

New fields opened in Jim Wells, Nueces and San Patricio. Producing areas in Refugio and Jackson counties spread.

Corpus Christi.—Greater ratio of oil discoveries along the South Texas Gulf Coast has brought about additional wildcatting. During the past several weeks, unproved explorations have doubled over the average of the preceding period. New fields have been opened during the past week in Jim Wells, Nueces and San Patricio counties, while further expansions have been provided to producing areas in Refugio and Jackson counties, as well as the three preceding areas.

Jim Wells County, which became the hot spot of activity with a Vicksburg discovery at Alice early last year, still is the center of interest. Two discovery wells are going ahead before completion, while a third wildcat looks like the opener of a new pool.

Texas Gulf Producing Company's E. E. Miller 1, in the south corner of a 376.4-acre tract, San Antonio de Agua Dulce Grant, 3 miles northeast of Alice in Jim Wells County, was drilling near its 5700-foot contract, but will plug back for completion in a Frio sand topped at 5094 feet where it showed for an oil producer. The well cored oil and gas sand at 5094-5101 feet, sandy shale and sand 5101-45 feet, oil sand 5145-55 feet, salt water sand with oil odor 5226-31 feet, more sand and sandy shale with oil odor 5231-52 feet and sand with oil odor at 5301-05 feet. These sands correspond closely to the Alice district, productive in the basal Frio and upper Vicksburg formation. On drill-stem test at 5090-5101 feet, 3 feet of mud and oil were recovered under 350 pounds pressure in 5 minutes. A drill-stem test at 5150-55 feet recovered 1000 feet of 36-gravity oil and 80 pounds pressure in 14 minutes, bottomhole pressure being 1050 pounds. A drill-stem test at 5226-31 feet developed 1440 feet of salt water and a steady flow of gas. After reaching its contract depth, the well will be plugged back for completion. The field has been named Reynolds.

Rowe, Hunter & Quinn's Pundt 1, described as the discovery of the Wade City field, and located three miles northwest of Orange Grove, will be carried to at least 5500 feet, last reports being below 4925 feet and coring. Casing was landed at 4782 feet after a drill-stem test at 4737-70 feet showed for a big gas well.

Several miles farther northwest, Randon Oil Company's San Antonio Joint Stock Land Bank 1, in Block 12, Sartain & Company subdivision, is coring below 6010 feet. At 5890 feet, the well was stopped to run electric log. It started to blowout but was killed and is going ahead with a good show of oil and gas on the ditch. The test topped the Jackson formation at 5095 feet and the Hockleyensis at 5483 feet, the showing apparently in the base of the latter formation.

Two wildcats have been commenced between the Alice and Ben Bolt fields of Jim Wells County. Pettus Oil & Refining Company's Garcia 1, Block 15, and Howell's Lindsay & Reed 1-a, Block 21, should throw considerable light on the possibilities between these areas.

Earl Callaway and Reese & Dunn's Smith 1, east offset and second well in the Ben Bolt field, cored the discovery sand at 5238-88 feet. Casing was landed at 5328 feet. This solid sand section is the thickest yet encountered in this part of Jim Wells County, and was reported saturated to bottom.

Refugio County apparently has a new field in the making in Humble Oil & Refining Company's Thompson 3, 10 miles west of Woodsboro. It cored sand with oil and gas odor at 5904-16 feet, and on drill stem test at 5902-10 feet recovered 20 feet of mud with distillate odor, in 5 minutes. Second test made at 5910-16 feet recovered 580 feet of salt water. The well was deepening.

H. H. Howell & Tom Graham's Hoffman 1, ½ mile northwest of the discovery of the Camada field of Jim Wells County, tested salt water through perforations at 6860-68 feet and again at 5818-28 feet, and squeezed for other tests up the hole. It missed the 5400-foot discovery pay.

Two Starts at Robstown

Nueces County's hot Robstown prospect, which has been the center of an active lease and royalty buying program for months, has two wildcats in their preliminary stages. Shield Oil Company has begun J. C. Potter, in lots 7 and 8, Block 10, Pauls subdivision, about 1½ miles northwest of Robstown, while Texas Conservative Oil Company has spudded J. E. Wright, NEc NW Section 42, about 3½ miles southwest of Robstown. Both wells, projected to 7000 feet, are on farmouts and are supported financially by leaseholders.

New Sand at Luby

A new sand in the Catahoula, this one gas, was uncovered in Seaboard Oil Corporation's LaPrelle 2-A, just southeast of the discovery of the North Luby field of Nueces County. On a drill-stem test at 4031-40 feet recovered 90 feet of gas cut mud and 90 pounds pressure in 10 minutes. It was coring for the 4300-foot sand.

Seaboard Oil Corporation's A. Persons, three miles east of Mathis and discovery well of the East Mathis field of San Patricio County, was still testing. Perforated at 5260-68 feet, the well flowed 49 barrels of 35.5-gravity crude the first 24 hours through 3/16-inch choke, then 34 barrels in 19 hours through the same size choke, followed by 6 barrels in 5 hours through ⅛-inch choke. Pressures were 375 pounds on tubing and 700 pounds casing. It had been drilled to 6348 feet, but was plugged back.

Republic Natural Gas Company's Rachal 21, 2000 feet southwest of production in the East White Point field, San Patricio County, is completing through perforations. It cored sands at 5587-5608 feet, 5670-77 feet and 5679-83 feet, hole being bottomed 5683 feet. The well merges production in the east field with the original gas area.

Refugio County, likewise, is receiving an increased wildcatting play. Quintana Petroleum Company's Maude Williams 11-A, 3250 feet southeast of Tomoconnor field production, flowed 808 barrels of oil per day through ⅜-inch choke under 550 pounds working pressure after casing had been perforated at 5870-78 feet. The company is drilling several other outposts to the field on the same ranch.

Two wells are being planned west of Refugio, both projected to the Jackson formation, while outposts are underway in several directions from the LaRosa field.

Lonnie Glasscock placed the Vanderbilt-West Ranch sector of Jackson County in the spotlight of interest with Drummond 1, in the Musquiz Grant, finding oil sand at 5530-43 feet and setting casing for a production test. The well previously has cored a section of sand between 5073-5179 feet, showing gas and oil, this zone corresponding to the West Ranch production. The lower pay is about the same level as that found in the Vanderbilt field. This would indicate that these fields (3 miles apart) are being merged by this well. The test had drilled plugs and perforated in the lower sand.

Magnolia Petroleum Company's newest well, 1320 feet west of production in the West Ranch field, should core the sand over the week end. About 2½ miles to the south of the field, Whitman Drilling Company et al's Stepan 1, block 40, was coring below 5086 feet, still in shale. It apparently is running low or has shaled out the producing section in the West Ranch formation which ordinarily produces gas.

Mills Bennett Production Company's Lowrance 1, deep test in the Francitas field of Jackson County, perforated at 8578-86 feet and 8632-38 feet, flowed gas and distillate through 3/32-inch choke on tubing, showing 2700 pounds working pressure, opening a new sand. The well went to salt water, and perforations were squeezed for further tests.

Two new field openers getting production tests

San Diego, Texas.—Chiltipin field, 10 miles north of San Diego in Duval County, was being opened late this week by William M. Nicholls' (J. O. Nelson) J. T. Graham 1. The well, in the Cuadrillo Irrigation Company Survey No. 572, perforated at 4784-90 feet with 24 shots and started flowing at the rate of 5 barrels of 44.8-gravity crude per hour through ⅛-inch choke, but later went to gas and likely will be squeezed to perforate lower.

The well found Pettus sand showing oil and gas at 4760-95 feet and 7-inch

casing was set at 4836 feet, 2 feet off bottom. Elevation is 393 feet, derrick floor.

In Webb County, discovery well of the Volpe field was being tested on pump. It is Magnolia Petroleum Company's Volpe - Benavides 5-B, Section 695, and 2½ miles east of the West Cole field. The test encountered Mirando oil sand at 2458-66 feet and casing was set at 2456 feet. It was swabbed several days, showing considerable oil, but insufficient pressure to flow.

South Texas Completions

CORPUS CHRISTI DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Brooks County—		
Humble, McGill 12 (Kelsey)	350	4743
Jackson County—		
Magnolia, West A-11 (West)	500	5161
Jim Wells County—		
Osborn & Henshaw, Thigpen 3 (E. Alice)	500	5354
Shell, Von Blucher 2 (Blucher) (WC)	*	8004
Walton & Wicker, Bankers Mortgage 2 (E. Alice)	550	5365
Nueces County—		
Bryant, Galvan 4 (Clara Driscoll)	300	5702
Killam & Reed & Cox, Holmes 2 (Clara Driscoll)	500	5713
McCurdy & McCurdy, State 2 (Luby)	400	4352
Nicholls, Florence Richardson 1, Sec. 10, Bohemian Colonoy (WC)	*	6510
Ogden, Miller 3 (Clara Driscoll) (WC)	*	6803
Seaboard, Luby 43 (Luby)	400	4362
Sinclair-Prairie, Isensee 6 (Saxet)	500	4875
Southern Minerals, Mastin 6 (Saxet)	275	6895
Sun, Butts 2 (Luby)	350	5043
Texas Gulf, Humphrey 1 (Saxet)	¶8½ & 80	6050
Refugio County—		
Hewitt & Dougherty, Rooke 5 (La Rosa)	550	6350
Quintana, Williams 11-A (Tomoconnor)	1600	5935
Tom O'Connor B-5 (Melon Creek)	750	6024
Union, Fox 22 (Fox)	750	6461
San Patricio County—		
Bay-Tex, Con Brown 5 (McCampbell)	1100	7223
Tom Graham, Moore 5 (McCampbell)	1100	7167
Grote & Corgey, Duphone & Kline 1 (McCampbell)	1050	7157
G. W. King 2 (McCampbell)	1100	7140
Houston, Baldwin 4 (E. White Point)	750	5692
Plymouth, Heflebower 1 (E. White Point)	600	5647
Sparks 4 (E. White Point)	550	5678
Rachel Ranch, Dunn 2 (White Point)	*	6003
Shell, Kirk 1 (E. White Point)	500	5663
LAREDO DISTRICT		
Duval County—		
Bridwell, Welder 2, Sec 552 (WC)	*	2973
Clark & Cowden, Peters 1-A (Rancho Solo)	¶5	1839
Cuellar, Cuellar 8 (6) (Hoffman)	*	2798
Hiawatha, Miller 9 (Longhorn)	450	4937
Humble, Duval 6-E (Eagle Hill)	617	2011
Longhorn, Miller 5-A (Longhorn)	500	4039
Magnolia, Weil 36 (Hoffman)	35	2841
Duval Ranch 10 (189) (Cedro Hill)	45	1400
Sun, Bruggeman 15 (Fitzsimmons)	350	4290
Jim Hogg County—		
Howard, Hellen 1, sec 21 (WC)	*	3515
Humble, Kelsey Bass 14 (Kelsey)	400	4734
Atwood 3 (Colorado)	43	3046
Starr County—		
Magnolia, Garcia 1 Por. 99 (WC)	*	6567
Sun, Olivares 5 (Sun)	350	4184
Zapata County—		
Camp, Hinnant 1, sec 72 (WC)	*	2046
Harper & Smith, Vela 1, Por 21 (Lopeno) (WC)	*	2508
Interstate Minerals, Lopez 14 (S. Mirando Valley)	66	1825
Thompson et al, Ramirez 1 (Lopeno) (WC)	*	2433
SAN ANTONIO DISTRICT		
Bexar County—		
Beatty, Joppich 1, sur 186 (WC)	*	1120
Desch, Brooks 1, LaGarcia Gr (WC)	*	1636
Spudder, Koehler 4 (Von Ormy)	*	747
Martell, Davis 2 (Salt Flats)	45	2721
Rio Bravo, Moore M-7 (Luling)	223	2162
Guadalupe County—		
Lincoln, Appling 2 (Darst Creek)	*	2625
Kendall County—		
Turner, Linder 1, sur 619 (WC)	*	1490
Medina County—		
Wagener, Medina Farms A-39 (Chicon Lake)	¾	385

* Failures; † Junked; ¶ Million cu. ft. gas.

Rio Grande deep tests approaching decisive depths

Edinburg, Texas.—Several deep wildcats in the Lower Rio Grande Valley are at critical stages. Midwest Royalty Company's Dayton 1, four miles west of Lyford in Willacy County, was below 8725 feet. Sal Vieja Oil Company's Neils Esperson 1, 13 miles east of Brownsville in Cameron County, had reached 5770 feet. Shary-Maddox Company's A. C. Neal, 20 miles north of Mission in Hidalgo County, was going ahead below 6355 feet.

A slight northwest extension to the Sullivan City Sector of the Samfordyce field was being proved as Phillips Petroleum Company's R. Flores 3 tested distillate through perforations 3937-55 feet. Pressures mounted to 1600 pounds on tubing and 1800 pounds on casing when closed in.

White Creek may yet be important shallow area

Beeville, Texas.—White Creek field, Live Oak County, after a series of disappointments and small wells, now appears to be a potentially important shallow producing area. Brauer, Holland and Smith's west offset to the discovery, flowed 400 barrels of oil per day through ⅜-inch choke after casing was perforated at 1413-22 feet in sand logged at the same level.

SAVE REPLACEMENTS... REDUCE DRUM WEAR...

ASBESTOS "CABLES" form the backbone of J-M 420 Rotary Lining. Woven into a compact mass, impregnated and compressed, they make a remarkably efficient and durable lining for heavy-duty work.

WITH THIS *TOUGHER* ROTARY LINING

● Most drillers and owners alike are sold on the better braking performance of J-M 420 Rotary Lining. Made of a specially impregnated, improved weave of "cabled" asbestos fibers, this new-type material is unusually strong and durable . . . highly resistant to heat and shock. It lasts longer, requires fewer replacements. Feed-off is unusually even, load control is easy and sure. Rim scoring is practically eliminated. It will pay you to get full details on J-M 420 before your next relining job. Write Johns-Manville, 22 East 40th Street, New York, N. Y.

JM Johns-Manville

420 ROTARY LINING

Texas Gulf Coast

South China, Jefferson County, looms as new oil field.

Dickinson two-mile extension may be separate structure.

Houston.—Probably the next new oil field for the Texas Gulf Coast will be at South China, Jefferson County. George Echols, Hebert and Smith's Fontenot 1, H. & T. B. Section 17, logged 36 feet of saturated oil sands in Frio formation last week at 7870 to 7906 feet. This sand was confirmed by an electrical log and also by side-wall cores. The hole was drilled deeper to 8760 feet and 7-inch casing run to 8017 feet. A production test will be made next week. Fontenot 1 also had sands with a slight show around 6673 to 6684 feet.

Two miles southeast of production at Dickinson, Galveston County, Pure Oil Company is completing Kohfeldt 1, T. W. Johnson Survey, at 8505 feet. It was perforated with 48 shots from 8495 to 8505 feet. On the first 22-hour gauge it flowed 51 barrels of 54.6-gravity oil through a 12/64-inch choke with a tubing pressure of 2400 pounds and a casing pressure of 1000 pounds. It also flowed 2,335,000 cubic feet of gas daily. The well is still cleaning and making 18 percent wash water, no salt water. It opens a new producing area for Galveston County. Previously a drill-stem test at 8495 to 8505 feet in 17 minutes flowed wash water and gas with a pressure of 300 pounds. Upon removing the drill stem, 180 feet of 49.6 gravity oil was recovered and 90 feet of wash water and distillate. Bottom-hole pressure was 4300 pounds. After the drill stem test, tubing was run. Gas and distillate sands were cored from 8455 to 8505 feet and then salt water sands. The hole was drilled below 8700 feet and 5½-inch casing was set. Pure Oil Company and Texas Gulf Producing Company own the acreage in the area of the new strike. The acreage in fact was farmed out to Pure Oil Company on a 50-50 basis. It is generally believed that the well is on the same structure as Dickinson field but cut from the main producing area by a fault. However, it all may be classed as Dickinson, the same as Gillock, which is southwest of Dickinson field.

Southeast of production at Aldine, Harris County, Hankamer's Rowland 1 was bottomed at 7284 feet, preparing to run casing to test a new sand for the field. The discovery well sand was pinched out. Since Texas Gulf Producing Company brought in the discovery well at 6824 feet, two dry holes have been drilled, one to the northeast and the other to the north. If Rowland 1 is a producer it will be the second for the area. The well cored a sand with a gas show and oil odor at 6624 to 6656 feet and electrical log showed a "kick" in the top 14 feet of sand. At 6800 feet sandy-shale formation with a slight show of oil was cored. At 6570 to 6595 feet, the top 5 feet showed a "kick" on electrical log.

Not much information is being given out on Stanolind Oil & Gas Company's Flowers 1, Martha area, I. & G. N. Section 7, Liberty County. It is reported that it had 10 feet of sand with a slight show of oil and gas from 8160 to 8170 feet. At the close of the week the hole was down to 8932 feet and the 8160-foot horizon has not been tested.

Woodland Oil Company's Berg 1, Needville prospect, H&TC Section 25, Ft. Bend County, attracted attention last week when sand and shale with an oil and gas odor was logged at 6330 to 6335 feet. The hole is down to 6406 feet in shale and drilling.

Wilcox production was extended west at Ace, Polk County, when the third well was completed in the formation. Patrick & Tyrell completed Kirby-West 1, after casing was perforated with 40 shots at 7810 to 7820 feet. It flowed 16½ barrels of 37-gravity oil per hour through a ¼-inch choke with a tubing pressure of 1250 pounds and a casing pressure of 1050 pounds. This well was considerably lower than the discovery for the new sand, completed at 7748 feet.

At Labelle, Jefferson County, Sun Oil Company has encountered trouble in Broussard Hebert 6. After drilling to 9504 feet, 7-inch casing was run to 9500 feet. While drilling out cement at 7443 feet the well started blowing dry gas but was killed. Casing had parted at 7442 feet. At 9500 feet the log showed a broken sand with gas and distillate odor and this sand was being tested when it blew out. It is a new horizon for the field, if productive.

Humble Oil & Refining Company is preparing to make a test on a new sand at Cheek, Jefferson County. B. A. Steinhagen 1, W. Carr Survey, was drilled to 7929 feet after passing up the regular producing sand at 7722 feet. At 7929 feet the hole was reamed for a drill-stem test. With the seat at 7912 feet it slipped and the operators recovered 3560 feet of mud and 300 feet of gas-cut mud through ¼-inch chokes. Pipe has been cemented for another test.

On the north side at Old Ocean, Brazoria County, Harrison & Abercrombie's Markle 1, Polly & Chance Survey, appeared to be the first dry hole for the deepest producing field in Texas. The hole was drilled to 11,079 feet and a test showed water. It has been plugged back to 7300 feet to sidetrack.

Another wildcat was abandoned in the Danevang area, Wharton County, last week. Moore and Ahern and Cron & Gracey's Mauritz Brothers 1 was abandoned at 5607 feet after coring salt water sands at 5424 to 5551 feet.

On the southeast side at Hastings, Brazoria County, McDannald Oil Company has abandoned Riper 1, I&GN Lot 57, at 6191 feet after coring salt water sands in the Frio formation at 6128 to 6132 feet.

Texas Gulf Coast Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Ace—		
Patrick & Tyrell, Kirby-West 1..	396	7820
Bammel—		
Hamil & Smith, Zapp 1.....	*	6740
Blue Ridge—		
R. L. P. Prod. Co., Gulf-Lusches 2	402	3939
Boling—		
Mackhank Oil Co., Farmer C-14..	528	4591
Brenham—		
C. V. Coulson, Sunderhusen 9.....	10	289
Clear Lake		
Humble, West-Fee C-8.....	167	5844
Dickinson—		
Bennett Oil Corp., Harris 2.....	296	8829
Fairbanks—		
Amerada-Stanolind, Foley 6.....	168	6857
Spaulding C-1	112	6843
Noble & Baker, Hillegeist 7.....	133	6847
Union Prod. Co., Whitehead, Rash & Phillips 6.....	101	6851
H. E. Williams, Stern 4.....	86	6843
Friendswood—		
Humble, Goodwin B-1.....	546	6042
West Prod. Co. 8.....	102	5843
West Prod. Co. B-30.....	432	6067
Hastings—		
McDannald Oil Co., Riper 1.....	*	6191
High Island—		
Stanolind, Smith 15-A.....	319	6289
League City—		
Geo. Echols, Ross-Stewart 3.....	231	8695
Phillips, Patton 1.....	*	10,535
Louise—		
Gulf Stream Inc., Garrett 3-B.....	20	5135
Orange—		
Gulf, LaFlour B-3.....	178	5921
Intra-State Oil Corp., Harmon 1..	¶1	5660
Thompsons—		
H. M. Naylor, Moody 2.....1080		7826
Tomball—		
Shell, Rudel 6.....	252	5579
Van Vleck—		
Skelly Oil Co., First National Bank 3	199	8509
Withers—		
Texas Co., Pierce Estate B-31....	62	5543
Colorado County—		
E. H. Barnes, Tait 1 n of Altair, B. B. B. & C. sur.....	*.	3138
Harris County—		
J. Deering, Ridgeview Farms 1, Cypress area, Moody sur.....	*	6523
Matagorda County—		
Sun Oil Co., Cavallin 1, sw of Palacious, J. Duncan sur.....	*	9582
Wharton County—		
Moore-Ahern & Cron-Gracey, Mauritz Bros., Danevang area.....	*	5607

* Failures; † Junked; ¶ Million cu. ft. gas.

TENDERS WANTED

Crude Oil

A. N. C. A. P.

The Administracion Nacional de Combustibles, Alcohol y Portland, of Montevideo, Uruguay, invite public tenders for the supply of crude oil for a term of three years or alternatively for a term of five years, both periods as from the 1st of September, 1941.

Copies of Specifications and Conditions of Tender may be obtained on application to the Uruguayan Consulate, London or New York, or the London Agents, Messrs. Duncan, Fox, & Co., Ltd., 144 Leadenhall Street E. C. 3, or the New York Agents, Messrs. Hughes & Co., 67 Wall Street.

Tenders in plain sealed envelopes must be delivered in the Uruguayan Consulate, London or New York, not later than 10:30 a. m. on the 10th day of July, 1939.

Texas permits to drill total 233

Permits for drilling 233 new wells were approved by the Texas Railroad Commission last week, 60 more than were allowed the week before.

Nine locations were granted in the East Texas field, including seven in

Gregg County and two in Rusk County. East Central Texas operators reported seven scattered locations.

There were 55 wells allowed in the West Texas district, including 31 in Ector County. In the East Central Texas area there were 34 new locations, of which eleven were in Jones County and eleven were in Shackelford County.

The commission approved 54 permits in Southwest Texas, including 12 in Medina County, while Gulf Coast operators reported 21 new locations.

There were 46 new wells granted in the North Texas district, 16 of which were in Wichita County and ten were in Young County. The Panhandle area reported seven new wells.

White Point rules revised to increase safety factor

Revision of East White Point rules to increase safety factors was ordered by the Texas Railroad Commission last week. The regulations call for a string of 350 feet of conductor pipe and lengthened the surface casing to 1500 feet.

The oil string must be cemented to within 3500 feet of the surface. The regulations likewise state that when drilling below 200 feet, operators shall use 10-pound mud with a maximum viscosity of 35 seconds.

South Louisiana

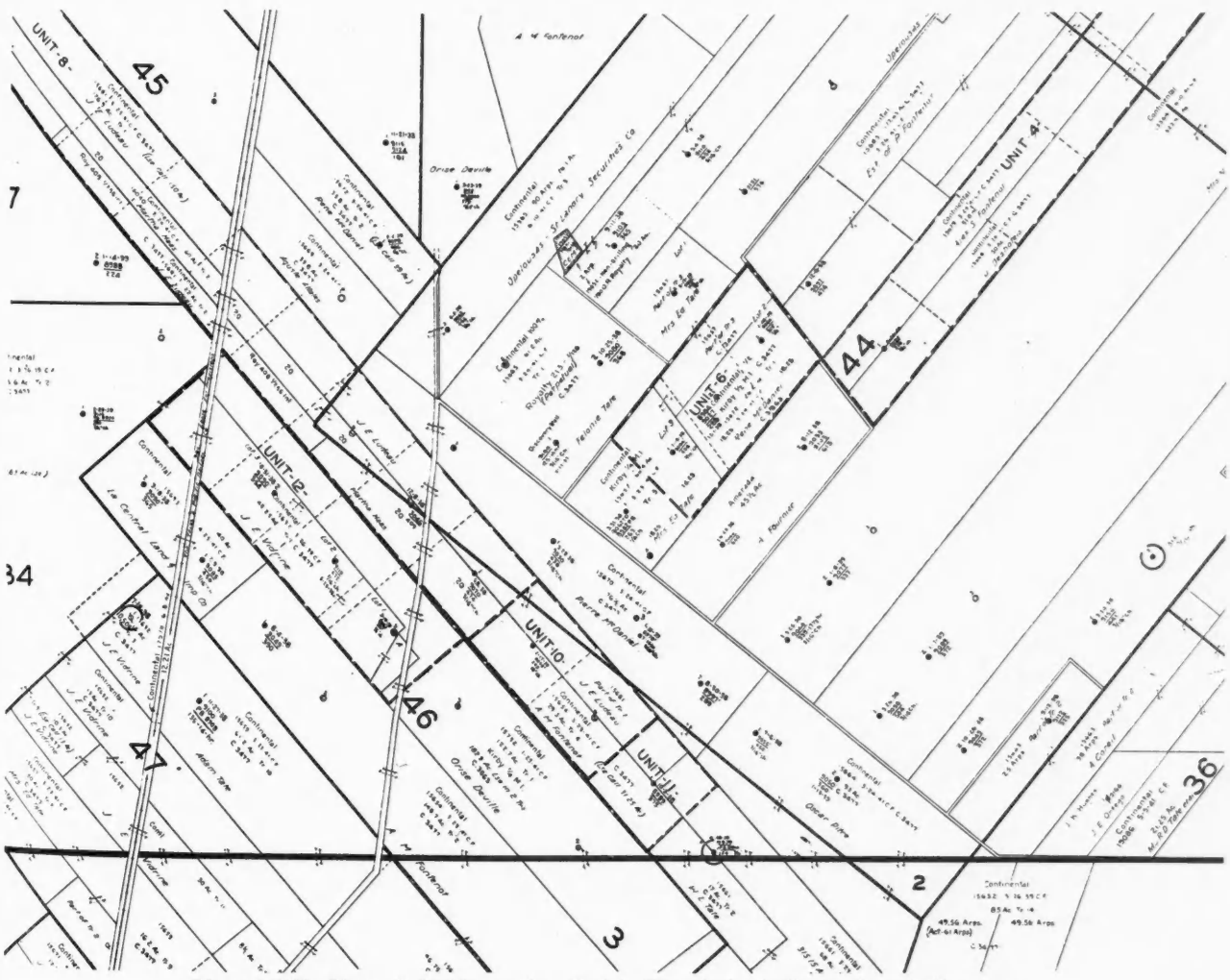
Wilcox producer opens third horizon in Villa Platte field. Beauregard Parish wildcat cores distillate cut in Sparta.

Discovery last week of Wilcox sand production in the Villa Platte field of Evangeline Parish opened the pool's third producing horizon and may double its ultimate recovery, thereby creating South Louisiana's most important strike of the year. These predictions are made on the basis of an unusually thick section of sand and belief that the producing area will be larger than credited to the previously proven sands of the field.

Although two other Villa Platte tests had logged Wilcox sand previously and showed oil, credit for proving the horizon productive goes to Continental Oil Company's Haas 3, which was drilled to 10,652 feet. After setting six-inch casing at 10,250 feet, it was perforated with 72 shots from 10,055-85 feet. The well flowed 312 barrels of 53.2 gravity pipe line oil in 24 hours through a 3/16-inch choke, and registered a tubing pressure of 2800 pounds. The well also is making 1,355,000 cubic feet of gas.

Haas 3, on the extreme southeast edge of the field, cored over 300 feet of saturated sand in a broken section between 9930 (top of Wilcox) to 10,652 feet. An electric log showed 18 ohms on the normal curve, and 25 ohms on the third and fourth curves. Ninety millivolts were recorded.

Because two tests had previously been carried to the formation, it was indicated several months ago that Villa Platte would produce oil in the Wilcox and that the sand would cover a large area. The first well at Villa Platte to log Wilcox sand was Continental Oil Company's Vidrine 1, on the southwest side, which was drilled to 10,506 feet and temporarily abandoned. Later the hole was sidetracked and again carried to the Wilcox, but it was found structurally low. The company is still trying to complete Vidrine 1 as a producer in the Wilcox sand. It has been perforated with 30 shots from 10,360-80



Map of Villa Platte field, Evangeline Parish. The circles indicate where Wilcox was logged. Haas 3, the discovery well for the Wilcox, is to the right.

feet, and is trying to get a drill stem test.

Meanwhile, Continental carried W. L. Tate 3 (sometimes referred to as W. L. Tate 1), the most southerly test in the field, to the Wilcox. This well topped the Wilcox sand at 9700 feet and was drilled to 10,939 feet before plugging back to upper sands at 8910 feet and completed as a 154-barrel well through 3/16-inch choke. Tate 3 is said to have found the Wilcox sand 200 feet higher than Haas 3, the producing well, to have shown 20 ohms on the fourth curve, and to have had a thicker saturated section than Haas 3.

Thus, all three of the Villa Platte Wilcox tests found several hundred feet of broken sand. Their location indicates the Wilcox will cover a larger area than previous producing levels of the field, the Tate and Haas sands of the Sparta formation. Haas 3, on the southeast side of the field, failed to produce in the upper horizons and had over 300 feet of Wilcox sand, while Tate 3, on the south side of the pool, had more sand than Haas 3. There is considerable faulting at Villa Platte. Some are of the opinion southern wells may be higher than those in the northern part of the field. Continental's J. K. Hughes test, on the southeast edge of the field, which was abandoned sometime ago in the Sparta sands, probably will be carried to the Wilcox sand as a result of the strike.

When Villa Platte was first discovered, estimates were that it would produce 15,000,000 barrels. The discovery of another sand boosted reserve estimates to 35,000,000 barrels. Now, with the Wilcox sand proven productive, its ultimate recovery may reach 70,000,000 barrels, making it one of the largest in South Louisiana. At present the field has more than 1500 proven acres, and is expected to expand further.

Continental Oil Company has 45 oil producing wells in the field.

Villa Platte is the second Wilcox sand field discovered this year in South Louisiana. The first was Eola in Avoyelles. Both fields have good sand sections and no doubt will lead to further exploratory work along the Sparta-Wilcox trend.

Show in Beauregard Parish test promises Sparta strike

Lake Charles.—The next oil field for Beauregard Parish may be at Merryville, where Atlantic Refining Company's Rice Land Company 1 has cored 20 feet of Sparta sand at 7685 to 7706 feet that had a cut of distillate and an odor of oil. The hole is now below 8100 feet, coring for the Wilcox. No salt water was shown in the 20-foot section. The fourth curve on an electric log looked weak in the top portion of the sand but the lower section showed some resistivity. The third curve looked encouraging. Should Rice Land Company 1 log oil sands in the Wilcox it will open the third Wilcox field for South Louisiana this year. The first was at Eola, Avoyelles Parish; second at Villa Platte, Evangeline Parish.

The Merryville prospect was worked by reflection seismograph by Atlantic Refining Company in 1938. It has about 100 feet of closure, a flat top structure with low relief, and a big fault pattern several miles long. It is located between Joe's Lake field in Newton County, Texas, and Eola, Avoyelles Parish.

A new gas and distillate field was discovered in Allen Parish when Bel Oil Company finally completed Bel Estate 1 on the North Elton prospect. This is the first producing area for Allen Parish. The well, perforated from 7279 to 7292 feet, came in flowing an estimated 1,000,000 cubic feet of gas daily with a spray of distillate through a ⅛-inch choke. Tubing pressure was 2000 pounds and casing was sealed. Bel Estate was drilled below 9000 feet, but after several tests was plugged back and completed in the 7292-foot horizon.

A half mile north of Bancroft field production, Beauregard Parish, Republic Production Company's Lutcher Moore 1 was preparing to make a drill stem test of a 7900-foot sand believed to be Sparta. The regular producing horizon is Cockfield formation around 7300 feet. Bancroft is located along the new Sparta-Wilcox trend.

In the Bannister area, Beauregard Parish, California Company's Long Bell Lumber Company 1 was drilling in shale below 9980 feet after topping the Wilcox formation at 9637 feet, where salt water sand was reported.

Northwest of production at Abbeville, Vermilion Parish, Continental Oil Company's Duhon 1 showed gas on a drill stem test. The well was perforated at 10,140 to 10,155 feet and blew dry gas with a 500-pound pressure. Duhon 1 was drilled below 10,600 feet and several good promising sands were cored.

Three fourths mile east of production at Abbeville, Stanolind Oil & Gas Company is completing Blanchette 1. The hole was drilled to 8009 feet and 7-inch casing, set at 7938 feet, was perforated with 10 shots at 7897 to 7900 feet and a 25-minute drill stem test showed 7 stands of salt water. It was then perforated at 7880 to 7884 feet with 12 holes and came in flowing 7½ barrels of 60-gravity distillate and 2,364,000 cubic feet of gas daily through a 3/16-inch choke with a tubing pressure of

South Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bancroft—		
Republic, Hennigan 1	168	7320
Lutcher Moore 6	189	7353
Charenton—		
Pan American, Lawes 13	145	5844
Veeder 14	50	1040
Creole—		
Superior, State 6	281	6775
Eola—		
Amerada, Marchive 1	811	8565
Lirette—		
Humble, Smith 1	*	11,656
New Iberia—		
Texas Co., Hanszen A-2	*	8101
Bolivar 8	*	2585
Quarantine Bay—		
Gulf, Plaquemines Land A-2	144	8158
Orleans Levee Board A-3	624	8150
Raceland—		
Amerada, South Coast 4	400	10,199
Villa Platte—		
Continental, Haas 3	312	10,085
West Hackberry—		
Superior, Kaough 1	505	7115
Acadia Parish—		
P. D. Freeman, Settig 2, Trilby area, 17-7s-1w	*	1418
T. T. Tolson et al, Turner 1, Trilby area, 25-7s-1e	*	8705
Cameron Parish—		
Union Sulphur, Sweet Lake Land Co. 1, sw Chalkley 9-12s-7w	*	9782
Plaquemines Parish—		
Texas Co., State Bastian Bay 1, Bastian Bay prospect, 43-20s-28e	*	12,257
St. James Parish—		
Shell, Schexneyder 1, LaPice prospect, 38-12s-15e	48	10,915
Terrebonne Parish—		
Texas Co., State 2, Coon Point prospect 23s-14e	*	6696

* Failures; † Junked; ¶ Million cu. ft. gas.

TELEPHONES

Harvey, La.
New Orleans—Uptown 1856

Houston, Texas
Capitol 5963

SPECIALIZING IN

DREDGING & PILE DRIVING for OIL COMPANIES

OPERATING
- 1— 5 yd. Clam Shell Dredge
- 2—12 in. Suction Dredges
- 2—10 in. Suction Dredges
- 1— 8 in. Suction Dredge
- 6—Pile Driving Rigs
- For Rent—Steel Barges
- For Sale—Steel Barges
- Creosoted and Cypress Piling

ELMAX CONSTRUCTION CO., INC.

Harvey, Louisiana

(Across the river from New Orleans)

2590 pounds and a casing pressure of 2640 pounds. Bottom-hole choke is being set.

A new producing sand was discovered on the east side of Charenton field, St. Mary Parish, last week by Pan American Production Company's Lawes 13. It was drilled to 7212 feet, and was perforated with 12 holes from 5834 to 5838 feet and with 18 holes from 5838 to 5844 feet. It flowed 145 barrels of pipe line oil daily through a 14/64-inch choke with a tubing pressure of 2000 pounds. The same company's Veeder 14 was completed at 1050 feet last week making only 50 barrels daily, 21-gravity oil, on the pump. Oil sand was topped at 1040 feet. This is the shallowest sand yet developed in the field.

Amerada Petroleum Corporation completed its first well in the Eola field, Avoyelles Parish, last week, when Marchive 1 came in to extend production of the field north. After drilling to 8601 feet, a drill stem test was made through perforations at 8573 to 8578 feet that showed 43 singles of oil and 5 singles of water, slightly salty. On a 24-hour test the well flowed 660 barrels through ¼-inch choke with a tubing pressure of 1550 pounds and a casing pressure of 1725 pounds. The well was killed and perforated at 8508 to 8565 feet, where it was completed flowing 811 barrels of 43-gravity pipe line oil through ¼-inch choke with a tubing pressure of 1625 pounds and a casing pressure of 900 pounds. The gas/oil ratio was 1100 to 1.

Pomo Petroleum Company has made its second location at Eola. Sentell 2 is 128 feet south and 826 feet east of the northwest corner of Section 8-3s-2e.

East of production at Eola, Gulf States Exploration Company's Haas Investment Company 1 was drilling in shale at 8600 feet in the Wilcox formation. According to reports no oil sands have been cored. The well is considerably low on structure and is expected by many to be the second dry hole for the field.

Northeast of Edgewood in Calcasieu Parish, Humble Oil & Refining Company's Edgewood Land Company 1 was drilling ahead in shale at 5681 feet after making a drill stem test that showed but slight oil. The sand was cored at 5455 to 5481 feet, and a 20-minute drill stem test made at 5452 to 5481 feet showed a 10-pound pressure and 3100 feet of salt water. An electrical log run to 5481 feet showed two ohms in the sand.

Union Sulphur Company's Tietje 1, southwest of South Elton field, Jefferson Davis Parish, appeared disappointing when a test showed salt water. The wildcat was perforated at 7628 to 7638 feet and after washing came in flowing 25 to 30 percent oil by heads. Later it died and a swab recovered 100 percent salt water. It has been shut down waiting on orders.

In Vermilion Bay, Iberia Parish, The Texas Company's State Vermilion Bay 3-B, was coring in shale at 9637 feet after coring gas sands at 9511 to 9517 feet. Cores at 9400 feet showed gas also.

Shell Oil Company is preparing to make another test on its first well at Chalkley field, Cameron Parish. Hanszen 1, east of production, tested a new horizon last week and recovered oil and salt water. Casing was perforated with 20 shots at 9050 to 9055 feet and was squeezed. It was then perforated with nine shots at 9037 to 9041 feet and packer set at 8985 feet. Through ¼-inch chokes in 20 minutes, the well showed a 23-pound pressure, 364 feet of oil and gas cut mud, 364 feet oil salt water and oil and 728 feet of salt water.

West of Chalkley, Cameron Parish, Union Sulphur Company's Sweet Lake Land Company 1 was abandoned at 9782 feet. No shows of oil or gas were reported.

On the northeast flank of Starks field, Calcasieu Parish, Skelly Oil Company has made location for Industrial Lumber Company 1, 1245 feet from the south line and 890 feet from the west line of Section 20-9s-12w.

At Bay Baptiste, Terrebonne Parish, Shell Oil Company has made location for a deep test. Peters 1-A is 330 feet east and 1800 feet south of the northwest corner of Section 47-19s-19e.

On the Denham Springs prospect, Livingston Parish, Fowler & Tower have made location for Ellis Hood 1, a wildcat 990 feet west and 660 feet north of the southeast corner of Section 37-7s-3e.

On the flank of the old Welsh field, Jefferson Davis Parish, C. W. Buckley has made location for Todd 1, 990 feet east and 150 feet south of the northwest corner of Section 34-9s-5w.

Nebraska law extends oil lease period to 10 years

Lincoln, Nebr. — Governor Cochran last week signed Legislative Bill 300, amending the oil lease statutes to permit leases to be held for periods as long as 10 years, and to permit prospecting and drilling firms to acquire and own land.

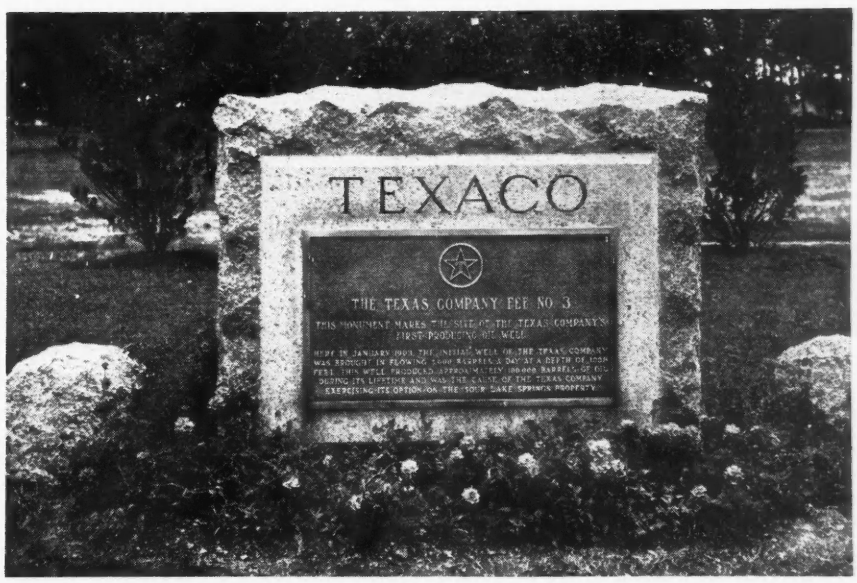
The bill was intended to encourage exploration in view of the current interest in the Forest City basin, comprising part of Nebraska.

The Texas Company places monument on site of first well

The most outstanding event in the starting of The Texas Company was, without doubt, the purchase of the Sour Lake Springs Hotel property, consisting of 815 acres in Hardin County, Texas, in fee. A typical story book gusher was encountered, the well producing 5000 barrels daily from 1008 feet in January, 1903. The well produced approximately 100,000 barrels during its lifetime, and the property, bought for $1,000,000, has produced approximately 25,000,000 barrels and is still productive.

T. J. Donoghue, vice president of The Texas Company, who was active in the management of the company at the time of the bringing in of this well, made a talk on conditions and experiences surrounding the acquisition of the property and the drilling of this well at ceremonies June 17 dedicating the attractive monument placed on the site.

At the time of the acquisition of this property, in 1902, The Texas Company was in its infancy, its single office being located at Beaumont, Texas. The principal operating personnel at that time consisted of Messrs. J. S. Cullinan, T. J. Donoghue, Walter and Jim Sharp. Encouraged by the success of this property, these men made additional purchases and brought in new discoveries, building pipe lines and refineries, constantly progressing with the aid of loyal, confident investors and enthusiastic, efficient personnel that they were able to attract to their organization. The world today recognizes the results of their labors, which have resulted in 10,000 oil wells in the United States, thousands of miles of pipe lines reaching out into oil fields in every section of the country, many refineries, and marketing outlets in every state of the Union, plus extensive and ever expanding producing, transportation, and marketing facilities throughout the world.



Monument commemorates beginning of a big oil company

North Louisiana Fields

Sixth Lake Bisteneau producer is field's largest.

Shaver to drill on highest point on Sabine Uplift.

Shreveport.—The sixth and largest wet gasser from basal Glen Rose lime in Lake Bisteneau, Bienville Parish, came in last week when Arkansas-Louisiana Gas Company's O. G. Thomas 1, NW NW 13-16n-10w, was completed at 5185 feet for about open flow of 100 million cubic feet of wet gas. Rock pressure was 2110 pounds.

The well was completed after 6000 gallons of acid was used and casing had been perforated at 5068-5110 feet with 150 shots and from 5136-73 feet with a similar number of shots. With an elevation of 228 feet this test logged massive anhydrite from 3882 to 4096 feet, and after topping Pettet (basal Glen Rose) lime at 4990 feet, topped porous lime at 5069 feet. The same company's O. G. Thomas B-1, SE SE 15-16n-10w, is waiting on final casing to set. With an elevation of 242 feet it logged massive anhydrite at 3975-4205 feet.

In the same district this company completed successfully a fishing job for two joints of tubing at Gayoso 2, C SW SE 14-16n-10w, which showed five million cubic feet of wet gas and a spray of distillate and water in lower Marine at 8319 feet and was drilling June 14 at 8322 feet. It is the first test to the lower Marine horizon (Cotton Valley) in Lake Bisteneau.

Seeking production from shallow levels on what has been identified from subsurface geology as a nose off the Bellevue structure, highest point geologically on the Sabine Uplift, O. F. Shaver and associates of Shreveport made location and are moving in rig for a 2500-foot test at E. L. Stewart 1, SW NE 4-18n-9w, Webster Parish.

Tippett Oil Corporation drilled plugs preparatory to testing an oil showing logged in 4 feet of saturation in the Tokio horizon at Tom Bell 1, SW SW NW 34-22n-16w, in the lenticular Vivian offshoot of the old Pine Island field, Caddo Parish.

The only test below 10,000 feet drilling in North Louisiana is Union Producing Company's Walker Unit 1, C SE 30-18n-8w, Sibley district, Webster Parish, reported at 10,226 feet in sand and shale in lower Marine topped at 10,082 feet. Elevation is 256 feet.

Standard Oil Company of Louisiana and Joe Modisett abandoned the geophysical prospect on their Lockhart block, Union Parish, after drilling to the Smackover (Permian lime), which checked low. The test, Frost Lumber Company B-1, SE SE 14-23n-2w, was abandoned at 8753 feet. With an elevation of 155 feet, this test topped Permian lime at 8627 feet; it carried salt water.

Seven of the 39 oil producers in the Shreveport field were making varying amounts of salt water, ranging from a fraction of 1 percent to 16 percent, according to data gathered to June 1. All of the wells making water, except one, which is making only a fraction of 1 percent, are in the west and southwest sides of the field in the general vicinity of the field's discovery well, completed in Section 27-18n-14w, on last July 15.

The Louisiana Conservation Commission is making a survey of the Lisbon field to gather data as to how many wells are on artificial lift, bottom-hole pressure data, etc.

North Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bienville Parish (Lake Bisteneau)—		
Arkansas-Louisiana Gas Co. Thomas 1, 13-16n-10w	¶100	5185
Caddo Parish (Vivian)—		
Harry Schulman, Browning B-1, 21-22n-16w	*	2710
Union Parish (Wildcat)—		
Standard and Modisett, Frost B-1, 14-23n-2w	*	8753

*Failures; †Junked; ¶Mil. cu. ft. gas.

Arkansas Fields

Two failures, one start in new Lewisville field

El Dorado, Ark.—Two failures were recorded against the new Lewisville field, LaFayette County, last week, both having failed to pick up the Glen Rose lime horizon found productive in two small oil wells in that area. Both the abandonments apparently were on the downthrown side of the fault.

Both operations were owned by East Texas Refining Company and Erwin & Leach, who own the two producing wells and discovered the field. The abandoned tests are: Frank Harlston 1, C N ½ SE NW 23-16s-24w, abandoned at 3765 feet; and F. G. Wright 1, C N ½ NW SE 24-16s-24w, abandoned at 3675 feet. The former test, with elevation of 270 feet, topped Massive anhydrite at 3526 feet; and the latter cut the fault at 786 feet and with elevation of 265 feet logged massive anhydrite at 3440 feet. Both tests were low as the producers had found the oil in what corresponds to the Hill sand at Ro-

Arkansas Completions

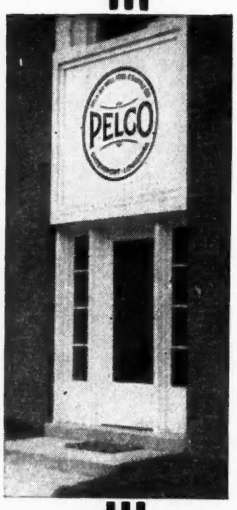
Company, Well and Location	Init. Prod. Bbls.	Depth
Clark County (Wildcat)—		
Zick, Tr., Greene 2, 27-8s-18w	*	627
Columbia County (Magnolia)—		
Southwood Oil Co., Grelling 1, 23-17-20	432	7536
Columbia County (Village)—		
Standard, Phillips 2, 15-17-19	720	7412
La Fayette County (Lewisville)—		
East Texas Ref. Co. et al, Harlston 1, 23-16-24	*	3765
Wright 1, 24-16-24	*	3675

*Failures; †Junked; ¶Mil. cu. ft. gas.

What is a Well Digger ?

A well digger is a man we've waited on, hand and foot, for thirty years. He wants stuff that makes his job easier and results more assured. He likes us because we provide these things and enjoy doing it. (Damn a man who works because he has to!)

We have heard it said that a well digger will quit you cold if you let him down. But that's only hearsay. We wouldn't know.



PELICAN WELL TOOL & SUPPLY CO.

SHREVEPORT LOUISIANA

PELCO TRADE MARK

Lake Charles—Houma—Converse
New Iberia—Monroe
Cotton Valley—Greggton
Magnolia—Houston

dessa, the first sand under the massive anhydrite, at about 3400 feet. These operators made one new location in the field last week.

G. H. Vaughn and associates' Jones 1, NE NE 21-17s-20w, Columbia County, 1¼ miles west of Magnolia production, arranged to set 6-inch casing Friday of last week after topping Permian lime porosity at 7497 feet. Elevation is 356 feet. Electric log was run before decision to set casing. Total depth is 7562 feet.

Only one well was completed during the last week in the Magnolia field to bring to 30 the number of Permian lime oil wells. Two other operations were ready to test. One new well was completed in the Village field, also in Columbia County, to bring the total of oil wells there to eight.

Southeast of Magnolia, the Columbia County wildcat of Atlantic Refining Company, Pine Woods Lumber Company 1, SE NE 16-18s-22w, arranged to core at 4235 feet for the Glen Rose lime horizons just below massive anhydrite, which was topped at 4060 feet, identification being made from cuttings. This is a deep geophysical prospect.

Arkansas permits

El Dorado, Ark.—Five drilling permits were authorized last week by the Arkansas Oil and Gas Commission, as follows:

Columbia County—G. H. Vaughn and associates' Lee Paschal 1, C SE NW 22-17-20; Atlantic Refining Company, Luel Spain 1, C SW SW 18-17-19; Miller County—Vaccaro and Waterman, Lora W. Brown 1, C NW SW SW 1-20-28; Union County—Sam Sebersky and associates, Jerry 2, C SW SE SW 21-17-14; and J. R. Lockhart, Porter Jerry 1, located 665 feet west and 235 feet south NEc NE SE 15-17-14.

27 Louisiana permits

Shreveport.— Twenty-seven drilling permits were authorized last week by the Louisiana Conservation Commission of which nine were in North Louisiana divided among the following parishes: Caddo, 5; LaSalle, 1; Sabine, 1; and Webster, 3. The 18 in South Louisiana were in the following parishes: East Baton Rouge, 3; Iberia, 3; La Fourche, 8; Plaquemines, 1; Rapides, 1; St. Mary, 1; and Terrebonne, 1.

Bennett Interests acquire Mar-Tex stock and control

Bennett Petroleum Corporation of Houston last week assumed control of Mar-Tex Oil Corporation through purchase of a majority of stock. The acquisition, which was made for an undisclosed sum, will throw direction of extensive holdings in Golden Meadows field, La Fourche Parish, Louisiana, and Dickinson field, Galveston County, Texas, to the Frank W. Bennett interests. Both companies will have headquarters in Houston's Esperson Building.

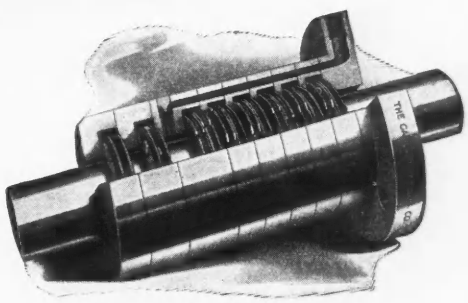
JOSEPH W. HARTMAN, 35, of Monroe, Louisiana, vice president of Imperial Oil & Gas Products Company of Pittsburgh, Pennsylvania, was fatally injured last week in an automobile accident in Grant Parish, Louisiana. He suffered fractures of both legs and other injuries.

N.M.U. ends strike against Petroleum Navigation firm

Differences between the National Maritime Union and tanker fleet owners appeared to be at an end on June 14 as the seamen's union called off its strike against Petroleum Navigation Company. The peace agreement, coming on the heels of termination of seamen's strikes against four major tanker lines indicated that maritime labor troubles were at an end, although the N. M. U. has announced that its members will refuse to cross picket lines established by the Masters, Mates, and Pilots Association, the Marine Engineer's Beneficial Association, and the American Radio Telegraphists Association, who are still maintaining their strike against Petroleum Navigation Company. The latter three unions, representing deck and engine room officers, and radio operators, struck against the company in sympathy with the N. M. U., and later presented demands of their own.

CHARLES EUGENE (LITTLE RED) MORRIS, 51, district drilling and production superintendent for Union Producing Company, died of a heart attack at his home in Shreveport June 12. Funeral rites were held in Shreveport June 14. Before joining United Gas Company in 1927 he was connected with Standard Oil Company of Louisiana and Gulf Refining Company as a scout.

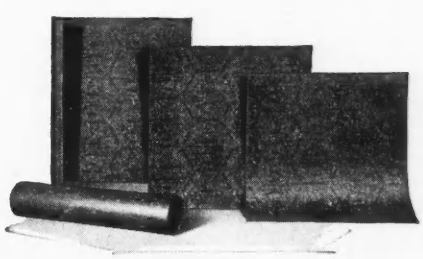
SPECIALLY DEVELOPED BY GARLOCK FOR THE OIL INDUSTRY



GARLOCK 875
Gas Compressor Metal Packing

GARLOCK 875

Made of an improved, non-abrasive iron, GARLOCK 875 Metal Packing gives long, dependable service on high and low stage gas compressors. In actual service it has conclusively demonstrated its superiority.



GARLOCK 7021
Compressed Asbestos Sheet Packing

GARLOCK 7021

A superior gasketing material for high temperatures and extreme pressures. Stands up under the most severe conditions. Recommended for pipe lines, cracking stills and other equipment handling gasoline, light oils, gas and steam.

THE GARLOCK PACKING COMPANY

Palmyra, New York

Tulsa, Okla. Houston, Texas Los Angeles, Calif.

GARLOCK

New Mexico Fields

Extension and lease deals boost drilling in Maljamar area.

Production limits of Cooper field expanded to northeast.

Hobbs, N. M.—The southwest portion of the Maljamar field, western Lea County, is assured of considerable development through completion of an extension producer and the sub-leasing of acreage from the discovery block by Maljamar Oil & Gas Corporation to independents. Carper Drilling Company's Simon 1, C NE NE 29-17s-32e, involving one of the lease farmouts, recently advanced production to the south by swabbing and flowing 150 barrels of oil in 24 hours after 110-quart nitro shot at 3722-59 feet. Albert T. Woods of Artesia and associates assumed drilling obligations in taking over W½ NE Section 29 and the E½ NE Section 30-17s-32e. Paul Love et al's Pearsall 3, C NW NW 33-17s-32e, seeking a major south extension, has been delayed by a fishing job at 1175 feet.

Carper Drilling Company and Taylor's Taylor 1, SW SW SW 30-16s-32e, 2¼ miles northwest of the Maljamar field, recently widened the producing area, rated at 10 barrels of oil daily after 2 nitro shots. The well is making gas from the upper lime through bradenhead, and the owners have arranged to sell approximately 5,000,000 cubic feet daily. Taylor 1 was drilled to 4097 feet, with an elevation of 4164 feet, then plugged back to 4050 feet. Production allowables in the field are greater than other Lea County areas since the oil shares the same market with the Artesia district.

Six New Starts

Lea County registered 6 new operations the past week to equal the volume reported the previous week. The Vacuum field accounted for 3 of the tests. Drilling & Exploration Company, Inc.'s State-Shell 1-O, NE NW NE 34-17s-34e, near the southwest edge of the field, has rigged up rotary. It is on a 120-acre farmout from Shell Oil Company, which will be carried for an eighth royalty. The latter retained its State 1-O, an oil producer, and the surrounding 40-acre unit. The Texas Company's State 4-N, C NW NW 30-17s-35e, is a late authorization, and operations have been started on Ohio Oil Company's State-Warn 3, lease 3, C SW NE 33-17s-35e.

Magnolia Petroleum Company's State 1-S, C NE SW 34-16s-34e, Lea County wildcat 3¼ miles northwest of the Vacuum field discovery producer, logged nominal show of gas in white lime at 4812-18 feet, with an elevation of 4090 feet. Top of brown lime section was called at 4886 feet, with no further shows recorded in drilling to 4935 feet.

The productive limits of the Cooper field were expanded to the northeast when the Kan-Mex Oil Corporation's Vaughan-Conoco 4-B-3, C SE NE 3-24s-36e, flowed 54 barrels of 32-gravity oil in 6 hours through 8/64-inch choke from broken pay at 3560-3625 feet. A dry hole was indicated before using 5000 gallons of acid.

The absence of a normal gas yield is held responsible for the light flow developed by Texas Pacific Coal & Oil Company's State 16-A, NE NE SE 11-22s-36e, situated on the south end of the lime area lying between the Eunice and Penrose fields. State 16-A flowed 350 barrels natural on completion gauge after drilling to 3802 feet, or 282 feet sub sea. The company has spudded State 17-A as a north offset.

Magnolia Petroleum Company's Selby 1, southeast outpost for the Lovington pool, logged small show of gas 4908-10 feet, and was drilling at 4980 feet. Water encountered at 4793-97 feet and 4826-30 feet decreased in volume while drilling with cable tools.

Two new operations were assigned to the Mattix sandy-lime area on acreage farmed out by majors. Carl B. King Drilling Company's Harrison 1, C SE NW 20-24s-37e, was subleased by Tide Water Associated Oil Company. Anderson - Prichard Oil Corporation's Blinebry 2, C SE SW 29-23s-37e, is on acreage held by The Texas Company, and the first well was completed by R. Olson et al. Continental Oil Company et al's Jack 1-B-29, NE SE SE 29-24s-37e, gauged 56 barrels of 37.5-gravity oil hourly through ¾-inch choke natural from sandy-lime at 3500-60 feet. This well previously gauged 116 barrels hourly through 5½-inch casing with drill pipe suspended in the hole.

New Mexico Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Eddy County—		
Etz-Cone et al, Nelson 1, se se ne 10-18s-30e	*	3326
Lea County (Cooper)—		
Kan-Mex Oil Corp., Vaughan-Conoco 4-B, c se ne 3-24s-36e	216	3625
Lea County (Eunice)—		
Repollo Oil Co., State 2-D-157, nw ne sw 12-22s-36e	584	3767
T. P. Coal & Oil Co., State 16-A, ne ne se 11-22s-36e	350	3802
Lea County (Lovington)—		
Repollo Oil Co., State 2-A-182, sw ne sw 31-16s-37e	400	4980
Skelly Oil Co., State 1-O, c sw sw 31-16s-37e	378	5081
Lea County (Mattix)—		
Continental et al, Jack 3-B-27, c nw se 27-24s-37e	108	3540
Jack 1-B-29, ne se se 29-24s-37e	1344	3560
Phillips Pet.-Pure, Woolworth 7, c sw ne 33-24s-37e	1576	3550
Schermerhorn Oil Corp., Woolworth 5, nw sw ne 28-24s-37e	407	3549
Lea County (Monument)—		
Continental et al, Britt 6-B-15, c w½ se nw 15-20s-37e	160	3915
Stanolind, Gilluly 4-B, nw nw nw 22-20s-37e	97	3854
The Texas Co., State-University 18-H, c ne nw 19-20s-37e	335	3870
Lea County (Penrose)—		
Shell Oil Co., T. O. May 1, nw nw nw 35-22s-37e	120	3622
The Texas Co., Falby 2-B, c se sw 8-22s-37e	15	3720
Skelly Oil Co., A. B. Baker 2-A, sw sw nw 26-22s-37e	600	3669
Lea County (Vacuum)—		
Magnolia, State-Bridges 33, c nw se 26-17s-34e	544	4735
Lea County (Wildcat)—		
Carper Drl. Co. & Taylor, Taylor 1, sw sw sw 30-16s-32e	15	4097
Quay County (Wildcat)—		
Shook et al, Chapman 1, 12-9n-36e	*	1050

* Failures; † Junked; ¶ Million cu. ft. gas.

Michigan Fields

Not a single strike or extension in 44 completions.

Sun's Basin wildcat may produce from Berea sand.

Mt. Pleasant, Mich.—Completions out-ran new starts, 44 to 27, for the week, with both concentrated in Southwestern Michigan. Only 8 of the 44 completions were outside of the shallow lime play running north-south along the Lake Michigan coast.

Six wildcats were completed dry, and none of the successful completions extended previously proven fields.

Sun Oil Company drilled its first wildcat in Southwestern Michigan dry, but had prospects of making a commercial oil well in the Berea on a wildcat in the basin. Schofield 1, Section 9-15n-1e, Midland County, originally was drilled to 3854 feet, and when the Dundee failed to show it was plugged back to 2552 feet and shot in a Berea sand oil zone. It swabbed as high as 70 barrels on a 24-hour test after the 80-quart shot.

Sun's Fryling 1, Section 26-6n-11w, Kent County wildcat, topped Traverse at 1969 and bottomed in Monroe lime at 2290 dry. The company meanwhile has spudded a wildcat in Allegan County, Section 24-4n-11w.

Pure Oil Company's first venture in Southwestern Michigan since 1927-29, several years prior to the current boom, brought a dry hole this week when Smith 1, Section 32-1n-15w, Allegan County, a wildcat, bottomed at 1189 feet in Traverse and was dry. Pure at one time (1927-29) had thousands of acres under lease in Allegan County, including part of the Salem producing field, but dropped it after an extensive core testing campaign failed to establish structure to the satisfaction of company geologists.

Work is scheduled to be resumed this month by Charles Van Kuren on Hiawatha Club 2, Section 27-44n-9w, Mackinac County, only drilling location in the Upper Peninsula. It has been shut down at 1105 feet since last fall due to weather conditions. Van Kuren said Trenton lime, the objective, should be reached in 10 days drilling.

Michigan reached the 2,000,000-barrel per month mark the first time in its 14-year-old oil development history with May production totaling 2,075,252 barrels. This was 175,000 barrels higher than the previous month.

The 2,000,000-barrel mark was reached primarily as a result of shallow production, 1000-1900 feet, in Southwestern Michigan from the Traverse limestone —a formation which up to 1937 was regarded by the industry as too uncertain and erratic to be of commercial importance. Shallow Traverse fields accounted for 918,944 barrels of the new record peak.

Van Buren County with 228 oil wells produced 567,004 barrels in May to lead all other producing areas of the state.

Michigan Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
Columbia Oil Co., Barnes 1, ne ne sw 6-2n-13w	*	1601
Pure, Smith 1, se nw nw 32-1n-15w	*	1189
Daily Crude Oil Co., Steffes 2, se sw se 2-4n-13w	700	1617
Socony-Vacuum, Twining 2, sw se se 3-4n-13w	400	1598
Gordon Oil Co., Weber 1, se se nw 10-4n-13w	*	1725
Red-Man Oil Co., Fee 3, se nw ne 22-4n-13w	140	1582
Wicklund Dev. Co., Brender 1, se nw se 24-1n-13w	5	1502
Spence Cooke, Brooks 1, ne nw se 34-2n-12w	*	1521
Clare County—		
Gulf, State 2, c n ne sw 28-19n-6w	650	3884
Pure, Bicknell B6, c n sw se 28-19n-6w	3700	3897
Bicknell B9, c n nw se 28-19n-6w	2000	3895
J. V. Wicklund, Skelley 1, se nw nw 29-19n-6w	*	3902
Kent County—		
Sun, Fryling 1, ne ne ne 26-6n-11w	*	2290
Swanson Oil Co., Fletcher 2, se sw se 32-7n-12w	650	1814
Clarence Welsh, Donker 1, ne sw nw 33-7n-12w	90	1832
Voorhees, Flipse 1, se ne sw 33-7n-12w	225	1806
D. E. Foster, Nordin 1, ne sw se 33-7n-12w	250	1788
Smith Pet. Co., Zeef 3, ne sw sw 33-7n-12w	225	1791
Gilbert 1, ne ne nw 4-6n-12w	175	1785
Wolverine Nat. Gas, Johnson 4, sw nw ne 5-6n-12w	240	1792
Orlik 2, se ne nw 5-6n-12w	300	1788
Montcalm County—		
L. T. Barber, Sack 1, sw ne nw 27-12n-6w	¶15½	1292
Taggart Bros., Egebreten 1, c nw 17-12n-9w	¶7½	1119
Nielson 12, c ne 8-12n-9w	*	1615
Ogemaw County—		
Weber Oil Co., Mills 3, sw ne nw 27-21n-3e	*	1315
Buckingham 2, se nw sw 35-22n-2e	40	2648
Van Buren County—		
Crescent Oil Co., Kennedy 1, ne sw se 12-2s-16w	*	1065
Blood & Hendershots, Goodrow 1, nw ne nw 29-2s-16w	*	1047
Mesel & Spielbergs, Kahl 2, sw sw se 6-1s-14w	10	1225
Fisher & McCall, Munn 1, nw se se 10-1s-14w	*	1315
Calumet Synd., Rockwell 1, ne nw sw 16-1s-14w	*	1195
Devine & Strouds, Beals 1, ne nw 18-1s-14w	45	1225
Harry W. Leman, Teal 1, sw sw sw 1-1s-15w	20	1199
Strong 1, se se se 2-1s-15w	30	1186
Lang & Lewis, Landrus 1, ne nw ne 10-1s-15w	5	1188
Lockwood & Hooks, Henry 2, ne sw nw 12-1s-15w	50	1174
Fitchett et al, Fox 2, nw se nw 12-1s-15w	*	1650
Sprenger Bros., Ford 2, ne ne sw 12-1s-15w	15	1200
J. W. McIntosh, Henry 4, ne nw nw 12-1s-15w	75	1194
Fisher & McCall, Moorehead 2, nw nw ne 12-1s-15w	40	1182
O. O. Borden, Parisian 1, se ne nw 13-1s-15w	800	1203
Bridger Basin, Preston 1, ne nw ne 13-1s-15w	780	1199
Clapsaddle et al, Pepper 2, ne nw nw 24-1s-15w	650	1156
Alford Violette, Stickney 1, ne ne se 26-3s-16w	*	1001

* Failures; † Junked; ¶ Million cu. ft. gas.

Rocky Mountain Fields

Eighth productive horizon is found at Lance Creek.

Deeper zone may indicate west extension for field.

Casper, Wyo.—The eighth commercially productive horizon has been recently opened in Lance Creek, Niobrara County, eastern Wyoming, approximately 150 feet below the level of the highly productive Leo sand, second bench of the Minnelusa series. Producing possibilities of the newly opened horizon were indicated for the first time in Minnelusa Oil Corporation's Joss 2, SEC NE SW 6-35n-65w, a former Sundance well in the extreme western sector of the field. As is the general practice in the field, the formation has been termed the Joss sand, after the discovery well.

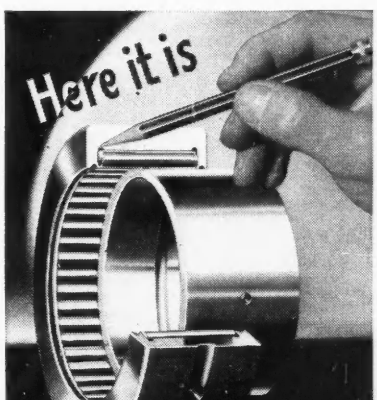
Joss 2 logged the dry Leo sand at 5149 feet, and drilled into the present producing formation at 5301-19 feet, where the well was completed for 814 barrels daily.

May Indicate Extension

The new sand apparently extends for a considerable distance to the west and may extend the proved producing limits of the field in that direction. Two deep tests drilled in the eastern sector of the field previously reported sandy sections in the lower sections of the hole which correlate with the new producing horizon of the field. They, however, reported the sand too tight for productivity.

The new discovery also opens new possibilities for the Bell, or lower Minnelusa section, in the western and southwestern areas of the field. Continental Oil Company's Tom Bell 10, CSW NW 34-36n-65w, discovery well for the Bell sand some 4 miles northeast of the new Joss location, found shows of oil in the lower horizon but plugged back for completion in the Leo. In view of the more permeable and porous conditions existing in the Joss sand on the western slope of the field, it is believed that similar conditions may be encountered in the Bell formation in this sector, and the sand made a valuable commercial producing horizon. There is no commercial production in Lance Creek from the Bell.

Routine drilling activity continues to advance steadily in the Lance Creek area, with 2 new well locations released within the proved area of the



McGILL'S New...
"Solidend"
MULTIROL
with New Outer Race Construction
and 12% More Load Carrying Capacity

Compared with bearings of the same width, the New McGILL "Solidend" MULTIROL gives approximately 12% more load carrying capacity. The special outer race construction, permits the use of full-length rounded-end rollers instead of trunnion-end rollers . . . and more roller surface in contact with the raceway means more load carrying capacity. A minimum of clearance between end shoulders and inner raceway makes bearing self-sealing.

No End Washers or Retainer Rings No more bending of end washers when making tight-fit shaft installations . . . no more accidental dis-assembling of bearing, yet, like the old trunnion-roller, it can be assembled right on the shaft without inner raceway and all the rollers stay in place.

Wide Variety of Sizes Available in a variety of size combinations for shafts up to 5 inches, it may be used in many different types of equipment. Used with or without inner raceway.

Low Cost Simplified construction means less cost in manufacturing — more savings for you, and a bearing that is easier and cheaper to install!

Midcontinent Representative: T. W. CROSBY
Telephone: 2-4368 909 Tulsa Loan Bldg., Tulsa, Okla.

McGILL MANUFACTURING COMPANY
1575 N. LAFAYETTE ST.
VALPARAISO, INDIANA

field and an average producer completed in the Leo sand during the past week. Continental Oil Company has 7 wells active in the field, several of which are near completion stage. Ohio Oil Company also has 3 rigs operating in the field, A. B. Cobb, and Argo and Minnelusa Oil Corporations, 1 each. The field is the most active in the Rocky Mountain district from a drilling standpoint; it also is heaviest single producing field in the area.

Revived interest is shown in Hamilton Dome, Hot Springs County, north central Wyoming, where Phebus Oil Company has started Government 2, NW SW SW 11-44n-98w. The location is an offset to Italo Petroleum Corporation's Phebus-Government 1, completed in 1937 to extend Hamilton Dome nearly ½ mile to the north and west.

Spring drilling has gotten underway on the major Baker-Glendive anticline in the eastern Montana district. The new well on the Baker field, southernmost of several local highs on the uplift, is Montana-Dakota Utilities' Government 137 Unit 7, NE SW SW 10-6n-60e. Operators have hole down 670 feet and are drilling ahead with standard tools. Surface casing was cemented at 104 feet.

Montana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Glacier County (Cut Bank Field)—		
Tarrant-Wiley, Connollyn 2, csw ne 31-34n-5w	325	2780
Dakota-Montana Oil Co., Gillin 4, ne se se 3-34n-6w	60	2952

*Failures; †Junked; ¶Mil. cu. ft. gas.

California Fields

Coalinga outpost logs Eocene and keeps drilling.

Shell will drill wildcat on San Emigdio Ranch.

Los Angeles. — Superior Oil Company's Pleasant Valley 1, wildcat being drilled on a block 2 miles from old Coalinga field in search of a continuation of the buried Eocene shore, was reported coring below 7800 feet after topping Eocene gray sand around 7400 feet.

This company has established something of a speed record in drilling Finck 1, outpost of North Rio Bravo field, to 6800 feet in 8 days, including the 24 hours the rig was idle while waiting for cement to set around 13⅜-inch casing landed at 1500 feet.

Although vast sums have been spent in wildcatting on San Emigdio Ranch, Kern County, Shell Oil Company is launching another test that will go down in NEc Section 13-11-22. This project will be KCL 2A-52-13 and follows tests previously drilled by Standard Oil Company of California, Union Oil Company, The Texas Company and Ohio Oil Company.

Richfield Oil Corporation has staked a wildcat location on a 4000-acre block in Buena Vista Lake area. Location for this test falls in NEc Section 36-31-25. Ohio Oil Company has offset acreage to the east of the proposed test, while Superior Oil Company has 320 acres to the south.

Another week will pass before anything definite is learned about Richfield Oil Company's Wheeler Ridge project, KCL 1 deep test which is bottomed at 11,004 feet, with a string of 6⅝-inch set at 10,815 feet. It will be permitted to stand cemented for a week or 10 days before an attempt is made to swab it in.

Encouraged by recent results of a well in the Ventura Avenue field, the the British American Producing Company, working with the Bolsa Chica Oil Corporation, is preparing to drill a second well at once. This new test, Hartman 8, will try for the same productive zone found by Hartman 7. The latter is capable of yielding approximately 990 barrels of 31.2-gravity oil per day.

Next in line for a completion in East Coalinga Eocene pool, Fresno County, is The Texas Company's Exeter Fee 1, which drilled to 7715 feet and is standing cemented on top of the oil sand. Standard Oil Company of California's No. 84-13C, west of Gatchell, is down to 5500 feet. Location has been spotted for No. 86-13C and for its first job in the Amerada area 2 miles northeast.

In Ventura County, Coronet Oil Company has acquired 250 acres from Capital Crude Oil Company where 16 shallow zone wells had previously been completed. Deep test wells are planned for the property. The parcel is 6 miles north of Santa Paula and west of Petroleum Securities Company's Ferndal Ranch holdings owned by O. C. Field.

In Sespe Canyon district, Merchants Petroleum Company has brought in Cochran 8 for 55 barrels daily at 1892 feet. Section 20 Oil Company's No. 1, a wildcat in Section 20-5-19, is drilling in sticky shale below 2900 feet showing a little oil and gas. Rotary equipment may soon be installed.

California Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Los Angeles County (Athens-Rosecrans)—		
Wilshire, Leitch 1	60	7870
Los Angeles County (Montebello West)—		
Brookline, Drake Comm. 1	1560	7630
Montebello Reservoir Oil, Reservoir 2	722	7612
Los Angeles County (Wilmington)—		
Long Beach Oil Dev., X (LB) 5	400	3855
Y (LB) 2	250	3853
Macson Oil Co., Macson G-55-3	450	3670
Sunray, Santa Fe A-1	125	5717
Kern County (Canal)—		
Ohio, KCL E-12	2832	8330
Kern County (Rio Bravo)—		
Union, KCL 8-34	500	11510
Santa Barbara County (Gato Ridge)—		
Petrol Corp., Tognazzini 32-B	600	3100
Ventura County (Ventura Avenue)—		
Lloyd Corp., No. 2	2253	9976
Los Angeles County (Aliso Canyon)—		
Standard, Ward 1	*	6909

*Failures; †Junked; ¶Mil. cu. ft. gas.

The Choice of Experienced Oil Men---

Many years of dependable performance in the oil fields has created the definite preference for Devlin Heavy Oil Malleable Fittings and Nipples that exists today. The high quality of materials used . . . skillful manufacture and careful inspection every step of the way . . . plus adequate precaution against damage to threads in transit, assures proper fit and real protection against pipe line failures.

Complete stock (including Standard, Malleable and Cast Iron Fittings and Nipples) always carried by J. E. Bobo, 2120 Rockwell Street, Houston, Texas, and at the factory.

WRITE FOR CATALOG 15-A

DEVLIN FITTINGS

90° Elbows . . . 45° Elbows . . . Tees. Supplied in black or galvanized finishes. Send for literature showing sizes and working pressures.

FRETZ SEAMLESS NIPPLES

Made from new high quality tested seamless tubing . . . accurately threaded . . . carefully reamed. Standard, Extra heavy, Double Extra heavy, Black or Galvanized. Shipped with distinctive Devlin Thread Protectors.

THOMAS DEVLIN MANUFACTURING CO. BURLINGTON, NEW JERSEY

WILDCAT REPORT
New Starts and Completions

ARKANSAS
COMPLETIONS

Clark County—Joe B. Zick, Tr.'s A. P. Greene 2, 27-8s-18w, top Midway 160 ft, top Arkadelphia 380 ft, top Nacatoch 565 ft, abnd 627 ft sandy shale. (Rigged, spudded and drilled in one week.)

CALIFORNIA
FIRST REPORTS

Los Angeles County — Redwood Oil Co.'s Mitchell 1, 150 ft n, 1200 ft e s¼c 22-4n-15w, Mint Canyon, lcn. John Hokom Oil & Gasoline Co.'s Hokom 1, 520 ft n, 350 ft e s¼c 31-2s-8w, Carbon Canyon, rur.

Kern County—Shell Oil Co.'s KCL 2a-52-13, 988 ft s, 2338 ft w nec 13-11-22, San Emigdio area, foundation. Standard's Tulare Farms 2-2, 660 ft n, 990 ft 4 w¼c 34-24-23, Trico area, lcn.

COMPLETIONS

Elmer B. Stone's No. 1, Dos Palos area, Northern California, abnd 1980 ft. Texas Co.'s Arroyo Seco 1, Arroyo Seco, Monterey County, abnd 4265 ft.

FLORIDA
COMPLETIONS

Monroe County — Peninsular Oil & Refg. Co.'s Cory 1, c nw 6-55s-34e, abnd 10,006 ft.

ILLINOIS
FIRST REPORTS

Bond County—L. C. Robinson et al's W. C. Fowler 1, ne se se 12-2n-5w, Northeast tnp, dr. Bob Benny's Thomas Sharf 1, c ne sw se 27-7n-4w, Shoal Creek tnp, loc.

Coles County—Perry, Miller & Nash's A. S. Ingram 1, nw nw nw 16-11n-10e, Hutton tnp, dr.

Crawford County—Downey & Connor's W. N. Cochran 1, se se sw 12-5n-12w, Honey Creek tnp, moving in materials.

Cumberland County—Carl Robinson's S. H. Brown 1, sw ne se 1-9n-10e, Crooked Creek tnp, rig.

McDonough County—A. J. Hammer's F. W. Powell 1, se se ne 29-4n-4w, Lamoine tnp, dr.

Macoupin County — American Petroleum Corp.'s Hillyard 1, sw ne nw 22-8n-8w, Hillyard tnp, dr.

St. Clair County—Gail et al's A. Schildnicht 1, w½ sw nw 10-2n-7w, O'Fallon tnp, loc. Williams et al's Columbia Quarry 1, se ne ne 10-1s-10w, Sugar Loaf tnp, dr. W. B. Greer's Fullmer 1, se se ne 27-2s-7w, Athens tnp, sp. Carnegy et al's W. A. Winter 1, se nw ne 13-3s-7w, Lenzburg tnp, dk.

Saline County—Kingwood Oil Co.'s J. Oliver 1, se nw nw 11-10s-6e, Independence tnp, loc.

COMPLETIONS

Bond County—Reisig & Quisenberry's M. F. Wilderman 1, ne ne ne 3-6n-3w, La Grange tnp, top Devonian 2195 ft, abnd 2430 ft.

Christian County—G. W. Nelms' Howell 1B, se se ne 25-15n-2w, Mt. Auburn tnp, abnd loc.

Edgar County—Rabe & Henderson's Sarah Wait 1, c ne ne 16-12n-13w, Grandview tnp, top Ste. Genevieve 658 ft, abnd 727 ft.

Jefferson County—Irvin J. Vawter's Sarah Kell 1, nw sw ne 9-1s-1e, Grand Prairie tnp, topped a sand saturation at 2065 ft, believed to be Benoist or Aux Vases, swabbed 70 bbls oil in 12 hours, td 2077 ft.

St. Clair County—A. F. Anding's Gutterman 1, se se nw 31-1n-8w, St. Clair tnp, abnd.

White County—Superior Oil Co.'s Fitton 1, sw sw ne 26-4s-14w, Phillips tnp, abnd 3063 ft in Ste. Genevieve.

INDIANA
FIRST REPORTS

Vanderburgh County—Eason Oil Co. and Gled Oil Co.'s Park Land 1, nw c se 14-6s-11w, City of Evansville, 6 mi northeast of Heusler pool of Posey County, moving in materials.

COMPLETIONS

Vanderburgh County—Ansel Douglas et al's (H. J. Baker's), Wm. Peters 1, se se se 4-6s-10w, Center tnp, abnd 1120 ft.

KANSAS
FIRST REPORTS

Cowley County—Eason Oil Co. et al's Muret 1, sec ne 25-33s-3e, pits. Brosius et al's Rahn 1, swc nw 13-34s-5e, lcn. Western Kansas O. & R. Co. et al's Gregory 1, sec nw 2-34s-6e, rur.

Douglas County—Three Star Oil Co.'s Griffith 1, c nw se 4-14s-18e, lcn.

Johnson County—Wood et al's Smoot 1, nw sw se 4-15s-22e, ru machine.

STATE	WILDCATS STARTED		WILDCAT TESTS COMPLETED							
			Total		Oil		Gas		Dry	
	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year
Alabama	...	3	...	1	...	...	...	...	...	1
Arkansas	1	17	1	11	...	1	...	1	1	10
California	4	116	2	58	...	16	...	...	2	41
Colorado	...	1	...	4	...	...	...	...	...	4
Florida	...	...	1	1	...	...	...	...	1	1
Georgia	...	3	...	1	...	...	...	...	...	1
Illinois	12	255	6	173	1	16	...	...	5	157
Indiana	1	14	1	16	...	5	...	1	1	10
Kansas	11	113	4	100	1	36	1	3	2	61
Kentucky	2	10	...	11	...	6	...	...	...	5
Louisiana	2	64	5	44	1	8	...	...	4	36
North Louisiana	1	23	2	13	...	3	...	...	2	10
South Louisiana	1	41	3	31	1	5	...	...	2	26
Michigan	2	93	6	142	...	10	...	...	6	132
Mississippi	...	5	...	1	...	...	...	...	...	1
Missouri	...	1	...	...	...	...	...	...	...	...
Montana	...	1	...	1	...	...	...	...	...	1
New Mexico	1	19	...	7	...	...	...	1	...	6
New York	...	...	...	2	...	...	...	1	...	...
Oklahoma	3	86	3	83	...	10	...	5	3	68
Ohio	...	3	...	7	...	1	...	...	...	6
Pennsylvania	1	2	...	2	...	...	...	...	...	2
South Dakota	...	1	...	...	...	...	...	...	...	...
Texas	30	495	26	514	1	53	...	6	25	455
East Texas	2	58	5	48	1	3	...	1	4	44
North Texas	9	74	2	107	...	19	...	1	2	87
Gulf Coast	1	56	5	42	...	3	...	...	5	39
Panhandle	...	5	...	5	...	...	...	...	...	5
South Texas	7	196	8	221	...	18	...	3	8	200
West Texas	11	106	6	91	...	10	...	1	6	80
West Virginia	1	2	...	...	...	...	...	...	...	...
Wyoming	...	1	...	1	...	...	...	...	...	1
Total United States	71	1305	55	1180	4	162	1	18	50	1000

Rice County—Lario O. & G. Co.'s Link 1, sec sw 17-19s-9w, dr.

Rooks County—Broadview Oil Co.'s Baxter 1, ne sw sw 35-8s-16w, lcn.

Russell County—Witt's Speere 1, swc ne 7-14s-14w, rig. Phillips Petroleum Co.'s Maier 1, swc ne 15-15s-14w, mim.

Sherman County — Goodland Independent Gas Co.'s Wilcoxson 1, se nw 27-8s-39w, dr.

Stafford County—Stanolind O&G Co.'s Sittner 2, ne sw sw 3-22s-12w, lcn.

COMPLETIONS

Butler County—Simpson Oil Co. et al's Evans 1, c sl sw 21-28s-7e, 1½ mi e Sensebaugh pool, top Mississippi 2761 ft, top Arbuckle lime 3201 ft, hfw 3217-19 ft, abnd 3219 ft.

Chase County—McCoy's Bernes 1, se nw ne 29-22s-6e, 4 mi ne Burns, top Mississippi 2815 ft, top Kinderhook 2940 ft, top Arbuckle 3043 ft, hfw 3044 ft, abnd 3065 ft.

Rice County—Phillips Petroleum Co.'s Brandenstein 1, c se nw 35-19s-10w, w Chase pool, top Arbuckle lime 3302 ft, td 3306 ft, 1400 gal acid, 312 bbls.

Sherman County — Goodland Independent Gas Co.'s Keeran 1, nec 30-8s-39w, s of Goodland, top gas pay in Cretaceous 1000 ft, td 1307 ft, 50,000 to 75,000 cu ft sweet gas.

KENTUCKY
FIRST REPORTS

Hancock County—Eldon Fulkerson et al's Thomas Jackson 1, 1 mi east of Pellville, moving in cable tools for McClosky test.

Meade County—G. E. Fisher's J. M. Greenwell 1, location for a 1600 foot test.

NORTH LOUISIANA
FIRST REPORTS

Webster Parish—O. F. Shaver and associates' E. L. Stewart 1, sw ne 4-18n-10w, derrick (2500-ft test).

COMPLETIONS

Bossier Parish—Harry Hanbury's Leonard 1, c ne ne 19-19n-13w, elev 188 ft, massive anhydrite 4348-4615 ft, top Travis Peak 5691 ft, abnd 6041 ft.

Union Parish—Standard Oil Company of Louisiana and Joe Modisett's Frost Lumber Company B-1, w½ se se 14-23n-2w, elev 155 ft, top James lime 3510 ft, top Travis Peak 4100 ft, top lower Marine 5800 ft, show dead oil in cuttings 6995-7008 ft, top Permian (Smackover) lime 8627 ft, top porosity (water) 8633 ft, abnd 8753 ft.

SOUTH LOUISIANA
FIRST REPORTS

St. Mary Parish—Amerada's J. Robichaux 1, Charenton area, 548 ft s fr NWc of tract, thence 1187 ft e at right angles in sec 27-13s-9e, preparing to spud.

COMPLETIONS

Acadia Parish—P. D. Freeman's Settig 2, Trilby area, 49 ft s of Settig 1, 17-7s-1w, abnd 1418 ft.

St. James Parish—Shell's Schexneyder 1, LiPice prospect, 2900 ft n and 600 ft w of SEc of sec 38-12s-15w, dr to 11,314 ft, pb and comp 10,910-15 ft, 49 bbls distillate, 3,700,000 cubic ft gas daily.

Terrebonne Parish—Texas Co.'s State 2, Coon Point, 13,556 ft s, 87 degrees 24 minutes, 44 seconds west fr Government Station on Coon Point, 23s-14e, abnd 6696 ft.

MICHIGAN
FIRST REPORTS

Muskegon County—Bliss Dev.'s Smith 1, nw ne sw 29-9n-16w, dr.

Ottawa County — Smith Pet. Co.'s Wisniswski 1, se se sw 27-7n-13w, dr.

COMPLETIONS

Allegan County—Columbia Oil Co.'s Barnes 1, ne ne sw 6-2n-13w, abnd 1601 ft. Pure Oil Co.'s Smith 1, se nw nw 32-1n-12w, Traverse 1178 ft, abnd 1189 ft. W. Spencer Cook's Brooks 1, ne nw se 34-2n-12w, abnd Traverse 1521 ft.

Clare County—J. V. Wicklund's Skelley 1, se nw nw 29-19n-6w, Monroe 3859 ft, abnd 3902 ft.

Kent County—Sun Oil Co.'s Fryling 1, ne ne ne 26-5n-11w, Traverse 1990 ft, abnd 2290 ft.

Van Buren County—Alfred Violette's Stickney 1, ne ne se 26-3s-16w, Traverse 984 ft, abnd 1001 ft.

NEW MEXICO
COMPLETION

Quay County—Shook et al's Chapman 1, 12-9n-36e, abnd 1050 ft.

OKLAHOMA
FIRST REPORTS

Grady County—Nicholas' Bushnell 1, c nw ne se 7-5n-8w, pits.

Jefferson County—Bridwell Oil Co.'s Seay "J" 1, se ne sw 29-6s-5w, otd 1519 ft, dr 1925 ft.

Kay County—Starr's State 1, nec sw 13-29n-2w, rur.

COMPLETIONS

Garfield County—Kerr-Lynn Oil Co.'s Heing

1, nwc 36-22n-4w, se Garber pool, top Mississippi 5010 ft, abnd 5046 ft.

Kiowa County—Heggerling's Bozman 1, sec ne 14-5n-17w, 6 mi ne Roosevelt, lcn abnd.

Payne County — Kirk-Green-Way et al's Kautz 1, nw sw se 6-18n-2e, n Ramsey pool, top first Wilcox 4915 ft, abnd 4934 ft.

PENNSYLVANIA

FIRST REPORTS

Clarion County — Dempseytown Gas Co.'s Bryner 33-1, Section A of Clarion quadrangle, 7150 ft from east line and 10,000 ft from north line, moving in materials for Oriskany test.

EAST TEXAS

FIRST REPORTS

Freestone County—John R. Bunn et al's Sallie Jeffries 1, 350 ft fr m/w/se line and 200 ft fr m/w/sw line of 90-acre tract, or 6500 ft fr nw and 1460 ft fr sw lines of W. A. Bishop sur, ¾ mi se Winkler, 8 mi ne Streetman, dr 1500 ft.

Limestone County—W. H. Foster et al's J. P. Key 1, 150 varas sw along nw line of W. S. Moss sur from ne corner, thence 670 varas nw at right angles Roxelia Scott sur, 1 mi se Datura, sp and sd.

COMPLETIONS

Camp County—Harry S. Moss et al's W. D. Keeling 1, 330 ft out of nwc of triangular 10-acre tract out of east corner of M. A. Esparcia sur, 3 mi se Pittsburg, elev 376 ft, Pecan chalk 2580-3078 ft, Austin chalk 3809-3904 ft, top Woodbine series 4328 ft, top sand 4465-83 ft, first water 4490 ft, abnd 4552 ft.

Freestone County—W. B. Johnson Drl. Co. et al's D. O. Nettles 1, 330 ft fr n and 3150 ft fr e lines of 291-acre tract, W. Carter sur, 4 mi se Streetman, elev 348 ft, Pecan chalk 2015-95 ft, Austin chalk 2815-3232 ft, abnd in Woodbine 3705 ft.

Kaufman County — Atwood-Glaspy & Raphael's fee 1, 1310 ft fr e and 5400 ft fr n lines of F. Cortez sur, 3 mi nw Mabank, elev 314 ft, Pecan chalk 1600-1715 ft, Austin chalk 2352-2875 ft, top Woodbine series 3277 ft, first water 3288 ft, abnd 3925 ft.

Marion County—M. D. K. Fitzwater et al's Terry 1, Wiley Coor Survey, flowing estimated 25 barrels oil daily by heads, 2318 ft (Tokio).

Navarro County—W. H. Strong et al's Emma Jackson 1, 300 ft fr se and 5200 ft fr nw lines of J. McNeal sur, 10 mi s Corsicana, abnd 2010 ft.

NORTH TEXAS

FIRST REPORTS

Archer County—Shappell Oil Co.'s C. E. Carter 1, 150 ft out of nwc sec 37, blk 5, Clark-Plumb sur, broken oil sand 912-29 ft, dr 945 ft.

Clay County — Griggs & Hatham's S. B. Householder 1, 1789 ft fr e and 2472 ft fr s lines blk 118, Byers Bros. sub-div, 1¼ mi nw Byers, lcn for 1150-ft test. Lefevre & Blakely's C. Snearly 1, 1320 ft fr n and 150 ft fr e lines of John Murphy sur A-322, 3 mi w by n of Henrietta, lcn for 1200-ft test. Staley Oil Co.'s D. J. Percifield 1, 330 ft out of sec lot 37, T. J. Belcher sub-div, 4 mi e by s of Halsell, lcn for deep test.

Cottle County—Magnolia Pet. Co.'s Alice Green 1, 330 ft fr n and 542 ft fr e and w lines of 120-acre tract, John M. Grogan sur, 10 mi sw Goodlet, rur for deep test.

Cooke County—W. H. Peckham et al's S. D. Meadors 1, 850 ft fr n and 660 ft fr e lines of G. W. Long sur A-570, 5 mi s Bulcher, lcn for 1600-ft test.

Haskell County—Marland-Drake Oil Co.'s G. H. Cobb 1, 330 ft out of nwc e½ sw¼ sec 96, J. F. Benson sur A-725, cem surface pipe.

Jack County—Sam Eddleman et al's A. B. Griffith 1, 1250 ft fr ne and 1500 ft fr se lines of S. Tallett sur A-1436, 1 mi ne Vineyard, mim for 4500 ft test. Harper Pet. Corp.'s V. S. Vanhooser 2, 252 ft s and 354 ft e of sec of A. Pearson sur A-1034, but in J. W. Morris sur A-1926, rust.

Wichita County—Carson & McLarty's Harry Zink 1, 450 ft fr n and 150 ft fr e lines blk 25, Cowherd Bros. sub-div, 1 mi s Iowa Park, lcn for 1000-ft test. Roy A. Westbrook Oil Corp.'s L. F. Ramming 2, 1404 ft fr w and 2342 ft fr s lines lot 1, H. Hastie sur A-92, testing o.s. 1250-67 ft.

Young County—L. V. Hull & W. W. Silk's H. N. Tucker 1, 330 ft fr e and 300 ft fr s lines sec 180, TE&L Co. sur, 1 mi w and 4 mi s Olney, dr 500 ft.

COMPLETIONS

Montague County—Cordova-Union Oil Corp. & Gillespie's R. L. Cable 1, 66 ft fr se and 990 ft fr sw lines of S. H. Stephenson sur A-682, 5 mi sw St. Jo, abnd 4550 ft.

Wise County—Webb Gregg et al's Luttrell 1, 660 ft out of sec of Jos. Mitchum sur, abnd 295 ft.

TEXAS GULF COAST

FIRST REPORTS

Chambers County—Nat Hunter's Lanz 1, ne of Anahuac, 330 ft out of sec of 620-ac tract, T. & N. O. No. 35, lcn.

COMPLETIONS

Ft. Bend County—Atlatl & Adam's Stancliff 1, nw flank of Sugarland, 330 ft n and e of 70-ac tract, E. Alcorn sur, abnd 5940 ft.

Harris County—Cockburn et al's Holtkamp 1, Mt. Houston area, abnd 4293 ft.

Matagorda County—Pierce Estate's Fee P-2, Podo area, 3000 ft fr ne ine and 2700 ft fr se line of 32,000-ac tract, B. Rawls & O. Stout sur, abnd 7820 ft.

San Jacinto County—Jack Frazier-Sinclair's Smith 1, n of Sheppard, J. Martinez No. 10, abnd 7512 ft.

Wharton County—Cockburn et al's Hamburger 1, n of Pickett Ridge, 466 ft fr sw line and 466 ft fr nw line of W. C. R. R. No. 65, abnd 6012 ft.

SOUTH TEXAS

FIRST REPORTS

Guadalupe County — Great Southern Oil Co.'s Goodson 1, 150 ft se of highway No. 3, 450 ft s line 100-ac tr, John Tom sur, set sur csg, woes.

Jim Wells County—Pettus O&R Co.'s Garcia 1, 467 ft s and w lines of lse, blk 15, Los Altos sub, ru.

Live Oak County—Luling Oil & Gas Co.'s Great Southern Life Ins. Co. 1, 330 ft n and e lines Tr 2987, blk 57, Simmons sub, moving in.

Milam County—Edwards' Camp 2, 1260 ft e and 7000 ft s line Robinson sur, sd 1895 ft.

Nueces County—E. A. Graham's Taylor 1, 1650 ft s line, 330 ft w line, Section 1, R&W sub, ru.

Refugio County—Phillips Dr. Co.'s Hunsdon 1, 990 ft s line, 660 ft w line Sec 27, Bonnie View sub, mim.

Webb County—F. J. Hynes' Bruni 1, 330 ft n and w lines sur 2241, moving in. Rowan & Hope's Laurel 1, center blk 4, Neal sub, Sur 1120, moving in.

COMPLETIONS

Bexar County—Beatty's Joppich 1, 150 ft n and e lines 100-ac, sec 5, sur 186, abnd 1120 ft. Desch's Brooks 1, 3650 ft n line of 1500 ac tr, 2580 ft w of Highway 66, De La Garcia grant, abnd 1636 ft.

Duval County—Bridwell's Welder 2, 330 ft n and e lines sw 160 ac sur 552, abnd 2972 ft.

Jim Hogg County—Howard's Hellen 1, 330 ft n and e lines blk 12, sur 21, abnd 3515 ft.

Kendall County—Turner's Linder 1, 290 ft sw line and 1650 ft se line 160 acre tr, Brown sur No. 619, abnd 1490 ft.

Nueces County—Nicholls' Richardson 1, 330 ft nw line, 440 ft sw line sec 10, Bohemian Colony sur, abnd 6508 ft.

Starr County—Magnolia's Garcia 1, 330 ft n and e lines lot 34, Garcia sub, Por 99, abnd 6567 ft.

Zapata County—Camp's Hinnant 1, 330 ft n and 150 ft w line sur 72, abnd 2046 ft. Harper & Smith's Vela 1, 330 ft ne and se lines of 1000-ac tr, adjoining Jamison sur, including parts Por. 21 and 20, abnd 2508 ft.

WEST TEXAS

FIRST REPORTS

Gaines County—Stanolind O&G Co.'s J. B. Rayner 1, c sw sw PSL sec 3, blk C-30, mim.

Jones County—J. L. Douglas et al's J. M. Blanton 1, 330 ft fr s and 500 ft fr w lines of south 247-acre tract, blk 1, S. L. Underwood sur, lcn.

Pecos County—J. L. Greene & L. Goodman's Masterson-Humble 1, 150 ft fr nw and 990 ft fr sw lines H&GN sec 105, blk 10, lcn. Thomasson Production Co.'s Young-Humble 1, 330 ft fr nw and sw lines H&GN sec 33, blk 10, lcn.

Tom Green County—M. R. Stuard et al's Mrs. O. E. Showen 1, 150 ft out of sec of lease, J. Eldridge sur No. 73, 300 ft s and w of 196-ft dry hole, lcn.

COMPLETIONS

Gaines County—Humble's W. T. Caswell 1, c sw sw PSL sec 10, blk A-24, elev 3344 ft, top anhydrite 1738 ft, top Yates 2850 ft, top brown lime 3840 ft, top solid lime 4350 ft, abnd in sul w 5002 ft.

Jones County—Healey Drl. Co. et al's J. J. Steele 1, 660 ft out of nec of tract, or 5700 ft fr e and 660 ft fr n lines of Harrison C.S.L. sur No. 334, abnd 3060 ft.

Pecos County — Mid-Western Pet. Corp.'s Mattei 1, 330 ft out of nec H&GN sec 64, blk 8, elev 2480 ft, abnd 160 ft.

Taylor County—D. H. Bolin et al's M. Neill 1, 2030 ft fr n and 330 ft fr e lines T&P sec 31, blk 17, abnd 2502 ft.

Tom Green County—R. P. Lynn & R. Cobb's X. B. Cox 1, 1000 ft fr w and 3842 ft fr s lines of V. Mueller sur No. 176, abnd 368 ft. Roush & Stuard's Pugh 1, 1038 ft fr n and 6920 ft fr e lines of Jas. Eldridge sur No. 73, abnd 196 ft.

WEST CENTRAL TEXAS

FIRST REPORTS

Eastland County—W. T. Luton et al's R. Been 1, 710 ft out of nec sw¼ H&TC sec 13, blk 3, machine for 3100-ft test. W. A. Stiles et al's J. Lyerla 1, 150 ft fr n and 2189 ft fr w lines of tract, southeast part of Nancy Ussury sur No. 20, machine for 1500-ft test.

Mills County—C. D. Lane et al's J. W. Spinks 1, 330 ft out of sec of J. Douglas sur No. 5, machine up for 2500-ft test.

Shackelford County—C. R. Schuster et al's E. DeWitt 1, 150 ft out of sec sec 56, University Lands sur, lcn for 4200-ft test.

Stephens County—A. G. Swanson et al's Veale-Frost 1, c ne ne T&P sec 37, blk 8, mim for 3600-ft test. Wittmer O&G Properties' B. D. Loving 1, 660 ft fr e and 80 ft fr s lines sec 66, Blind Asylum Lands, mim for 4500-ft test.

COMPLETIONS

Brown County—Goss et al's Steele 1, sec 32, BBB&C sur, abnd 735 ft.

Shackelford County—C. J. Kleiner & Heltzel's Morris 1-198, E. T. Ry. sec 198, abnd 1733 ft.

WEST VIRGINIA

FIRST REPORTS

Columbian Carbon Co.'s John F. Parsons 1, 3 miles north of Ripley, moving in materials for deep test.

Salt water injection well permit issued for Kunkel

King Oil Company has been granted a permit to inject salt water into the Kunkel lease, Kunkel pool, Archer County, Texas, into a sand found at 1150 feet. W. O. Kunkel 1 will be the injection well.

William M. Barret, Inc.
Consulting Geophysicists
Specializing in Magnetic Surveys
Contracts accepted for domestic and foreign projects, using the most improved instrumental and interpretative technique.
GIDDENS-LANE BUILDING
SHREVEPORT, LOUISIANA

HOARD EXPLORATION COMPANY
Seismograph Surveys
618 Esperson Bldg.
Houston Texas

THE FORT WORTH LABORATORIES
Analysis of oil field brines, cores, gas, oil, and minerals. Field gas testing. R. H. Fash, Vice-President; Long Distance 138. 828½ Monroe Street, Fort Worth, Texas.

JACK A. SCHLEY
Patent Attorney
(Established 1902)
PATENTS—INFRINGEMENTS—OPINIONS
San Antonio—Washington, D. C.
906 SECOND NAT'L BANK BLDG. — HOUSTON
1807-11 TOWER PETROLEUM BLDG. — DALLAS

PATENTS
Patents, Trade Marks, Copyrights and Infringement Litigation
HARDWAY & CATHEY
428-29-30 Bankers Mortgage Bldg.
Phone Capitol 9756 Houston, Texas

HOUSTON LABORATORIES
Analytical and Consulting Chemists
Podbielniak Gas Analysis
Oil Field Brines, Waters and Cores
Complete Evaluation of Crude Oils
Long Distance 267, Box 132, Houston, Texas

NOTES FOR THE Equipment Buyer and User

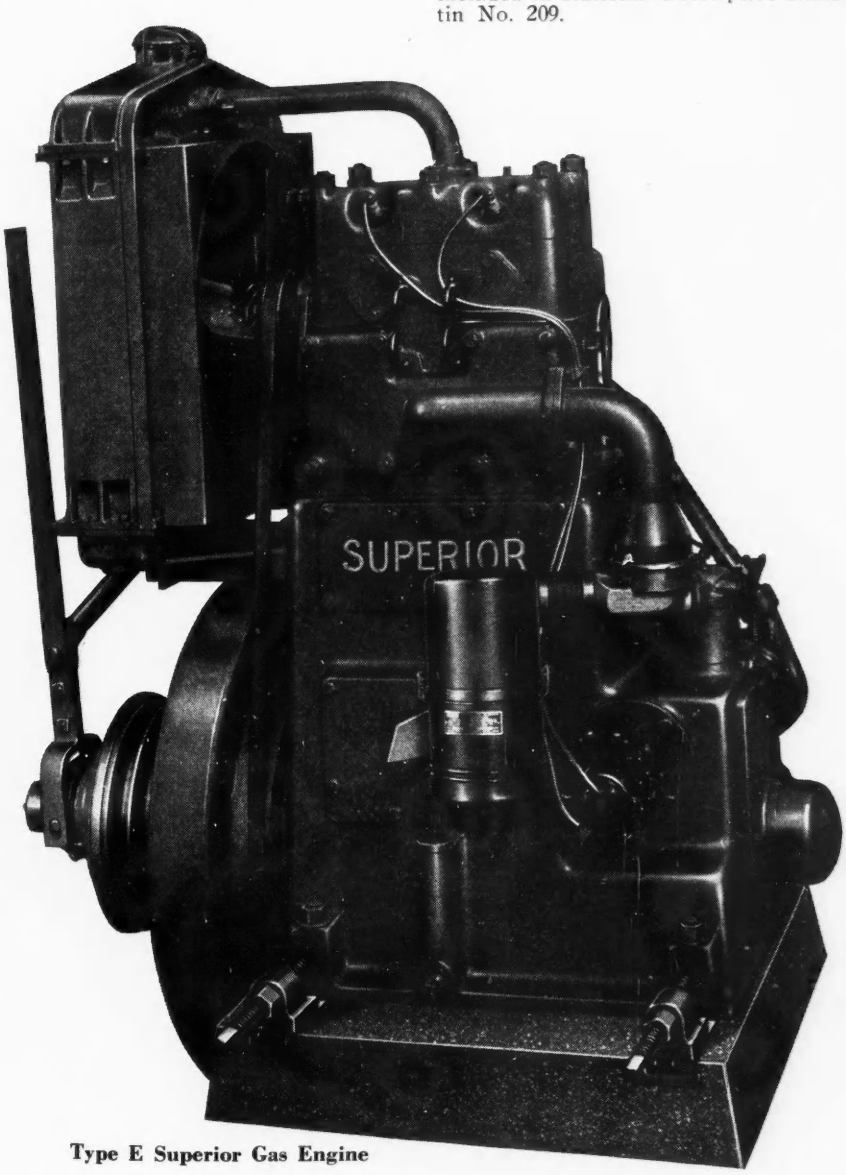
Gas Engine

THE NATIONAL SUPPLY COMPANY

The National Supply Company has recently introduced a new vertical 2-cycle, 2-cylinder gas engine for light and medium pumping service. This is known as the Superior Type E with a rating of 20 horsepower at 700 RPM and a 5-inch bore by 6-inch stroke. This engine is identical in general design with the larger types of Superior vertical 2-cylinder gas engines, which have been in use for several years in heavier oil field pumping.

This type of engine has a number of advantages for oil country pumping service, the company says. It operates at a slower speed, which makes it possible to adapt it to both single and double reduction gears as well as small geared powers. It may be mounted with practically the same installation costs and space requirements as a high-speed engine of equal power.

The crosshead type construction of this engine makes possible unusual economy in the use of lubricating oil. The crankcase oil does not contact the hot piston and cannot be contaminated by carbon from the piston and the rings. Cylinder and piston wear are minimized due to the side thrust of the connecting rods being carried by the crossheads. Double row Timken roller main bearings facilitate starting. A large diameter flywheel and a special mixing valve, which throttles mixture, provide smooth power and uniform torque even at light loads. The speed range is from 300 to 700 RPM. A radiator cooling system and power take off are regular equipment. Complete description and specifications are included in National Descriptive Bulletin No. 209.

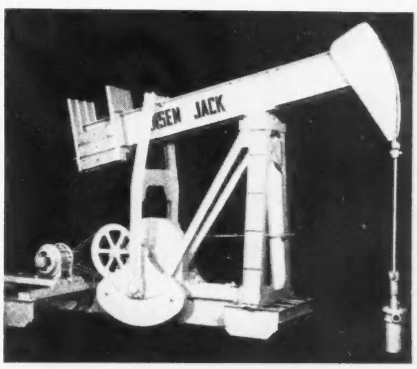


Type E Superior Gas Engine

Pumping Unit

JENSEN BROTHERS MANUFACTURING COMPANY

A new pumping unit, Model D, has been placed on the market by Jensen Brothers Manufacturing Company, Coffeyville, Kansas. This improved model has new style cranks and crank



Jensen Model D

weights, and is mounted (optional) on a Jensen sub-base. The unit is available with a wire line or cable head straight lift or with a straight lift mechanism. The company builds this unit in 10 sizes for wells ranging in depth from 500 to 6000 feet. It may be powered with any constant speed prime mover.

Well Survey Instrument

WALTER RUSKA & COMPANY

Walter Ruska & Company, 2332 Bellaire Boulevard, Houston, Texas, has put on the market a new photographic well surveying instrument.

The Warusco Borehole Clinometer can be furnished with compass as well survey instrument for measuring the amount of declination and direction of declination. The instrument is 1-inch outside diameter and 26 inches long. It records photographically and furnishes a direct reading chart of ¾-inch diameter. The instrument is designed to run inside the drill stem and will pass through a 3-inch regular tool joint.

As borehole clinometer, the instrument is enclosed in a steel shell 15/16-inch outside diameter and 3¼ feet long, weighing approximately 7½ pounds. As magnetic deviation indicator, the instrument is enclosed in a duraluminum shell 1⅜ inches outside diameter and 3¼ feet long, weighing approximately 4 pounds.

The instrument proper is made up of three sections. The first section contains a clock, two small flash light cells and a light source with reflector. The second section contains a magnetic compass and the third section consists of the slug trap and the angle units. The angle units are self-contained and mounted in brass sleeves, three angle units being available with range 0 to 5°, 0 to 10° and 0 to 20°. The angle units can be exchanged in the field.

The instrument is fitted into a ma-

ON YOUR MARK . . .

GET SET . . .

GO! . . . *for greater profits at any distance with*

DARCOVA (Orange Label) the standard for more than 30 years under severe service at all depths.

DARVAL (Blue Label) for service in wells to approximately 2,000 feet in depth.

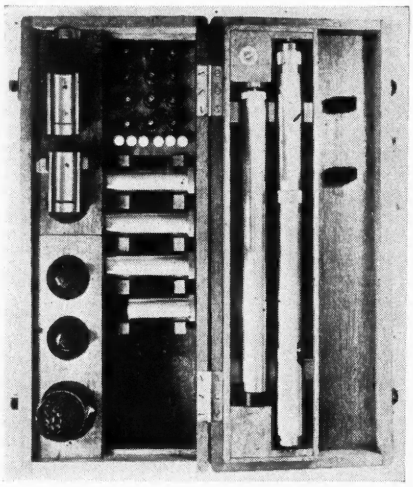
DARFLEX (Green Label) the popular favorite for wells to 800 feet in depth. The **original** composition valve cups are manufactured

only by

DARLING VALVE & MFG. CO.

WILLIAMSPORT, PA.

NOTES FOR THE Equipment Buyer and User



Warusco Borehole Clinometer

hogany carrying case containing the exchangeable angle units in individually marked brass housings, 12 batteries, 6 spare bulbs, slug magazine and loading mechanism, developing tank, developer, fixing solution and 50 photographic discs. Additional material for operating the instrument can be carried in the instrument case.

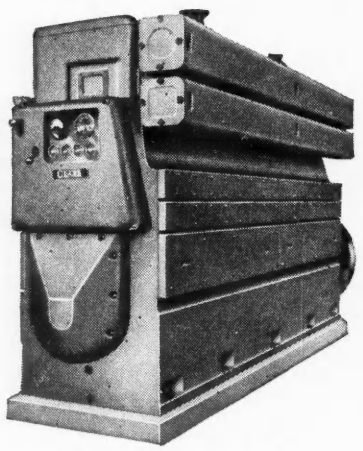
The instrument is well built and of excellent workmanship. Parts of the Warusco borehole clinometer are exchangeable and built to precise standards. No special training is necessary for its operation. The instrument is sold.

Gas-Diesel Engine

CLARK BROS. COMPANY

A new line of convertible 4-cycle gas and Diesel engines has been announced by Clark Bros. Company of Olean, New York.

These new engines are completely enclosed, have oil-cooled pistons, full force-feed lubrication, and offer an entirely new feature, the Clark "Cetane Selector." By means of the "Cetane Selector" the operator can change the fuel timing without shutting down the engine, thus making possible the use of a wider range of fuels.



Clark Gas-Diesel Engine

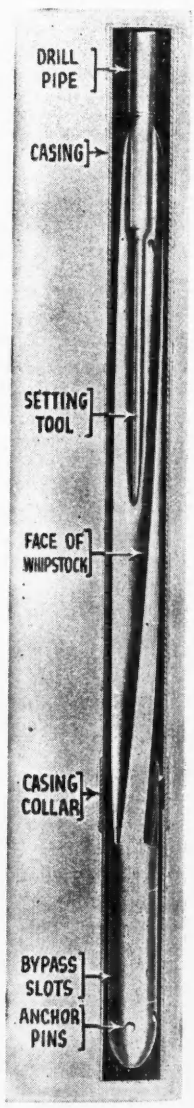
The engines have 10-inch bore x 12-inch stroke and are available in 3, 4, 6 and 8-cylinder sizes, ranging from 180 to 480 horsepower for gas and 200 to 535 horsepower for Diesel.

Casing Whipstock

EASTMAN OIL WELL SURVEY COMPANY

The Eastman Oil Well Survey Company, Dallas, Texas, announces an improved Casing Whipstock designed to set in casing to mill a window out through any grade of casing for sidetracking, deflecting, or straightening a cased well.

The whipstock has a long tapered face with a setting tool tube entering and passing through the face, down to a left hand threaded connection on the lower section. To put into operation it is made up on the drill pipe by the setting tool. It may be oriented into the hole, and when between casing collars at the desired depth, the drill pipe is filled with fluid and the arresting ball dropped, stopping downward circulation. Pump pressure is applied, the piston forces down, driving the pins outward into the casing. When the pins are driven, the piston passes the lower by-pass openings, allowing circulation to be regained and locking the pistons and pins into place.



Eastman Whipstock

The drill pipe is rotated to the right and left hand collar releases the whipstock from the string of drill pipe. A mill, preferably a core mill, is then put on drill pipe and a "window" is milled out of the casing.

The whipstock uses no shear bolts,

NOTES FOR THE Equipment Buyer and User

springs, or slips and does not require bridges or plugs on which to set or land. It sets firmly and securely by hydraulic pressure. The long improved taper of the whipstock aids milling and gives a gentle deflection through the casing window, say manufacturers.

Putnam Foreign Representative For Merco Centrifugal Company

Merco Centrifugal Company, San Francisco, announces appointment of Thadeus L. Putnam as export representative to cover all foreign fields except Canada. Putnam's headquarters are at 74 Trinity Place, New York.

Willard H. Cobb Advanced in United States Rubber Company

Willard H. Cobb, for the past several years general factory manager, mechanical goods plants, United States Rubber Company, has been appointed general manager of the Mechanical Goods and General Products divisions. This position includes supervision of the manufacture of Lastex yarn and rubber thread.

In announcing the appointment, F. B. Davis, Jr., president, said that it was in line with the policy of promoting from within to fill important positions in the company.

Herbert E. Smith, vice president, will continue supervision of all the activities of the divisions.

A graduate of Stevens Institute of Technology, Cobb joined United States Rubber Company in 1914. During the ensuing years, he has made steady progress through the organization to his new assignment.

WILLARD H. COBB
General Manager, Mechanical Goods and General Products, United States Rubber Company.

Lukens Steel Appoints Wiese General Manager of Sales

J. Frederic Wiese, who since 1935 has been assistant to vice president of Lukens Steel Company, Coatesville, Pa., has been appointed general manager of sales, according to an announcement made by F. H. Gordon, vice president in charge of sales of the company.

J. FREDERIC WIESE
General Manager of Sales, Lukens Steel Company

After graduation from Swarthmore College in 1921, Wiese joined the Chicago sales office of the Parkersburg Iron Company and was transferred to the home office of that company in 1925.

In August, 1926, he joined Lukens Steel Company and in 1935 was appointed assistant to vice president in charge of sales.

Walter F. Perkins Elected To Koppers Company Board

Walter F. Perkins, vice president of Koppers Company in charge of its Baltimore operations, has been elected a member of the board of directors of Koppers Company.

Perkins joined the former Bartlett Hayward Company in 1915 as an assistant superintendent. He was general superintendent in 1927 when he went to Worthington Pump & Machinery Corporation, Harrison, New Jersey, as works manager. He returned to Bartlett Hayward in 1932 as vice president and general manager. He later became president, a position which he held until the company, a subsidiary, was absorbed as a division of Koppers Company in 1936. He has been vice president of Koppers Company since that time and is in charge of the Bartlett Hayward and American Hammered

STEEL FIRE ESCAPES FOR Safety

. . . not because the builder plans a fire . . . but because the occupants demand safety. Drillers use CHIKSAN ALL-STEEL Rotary Hose for safety, too . . . and likewise save trouble, time and money.

LONG LIFE WITH FLEXIBILITY

CHIKSAN ALL-STEEL Rotary Hose is not affected by climatic conditions or age. All Joints turn freely on double rows of hardened steel balls in flame-hardened races. Pipe sections are welded to heavy duty Swing Joints, eliminating all shoulders and giving unobstructed fluid passage.

FOR SAFETY AND ECONOMY STANDARDIZE ON CHIKSAN All-Steel ROTARY HOSE.

CHIKSAN BALL BEARING SWING JOINTS

CHIKSAN OIL TOOL CO., LTD.
FULLERTON, CALIFORNIA

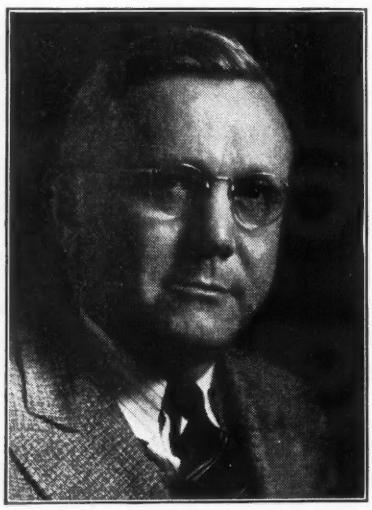
HEAVY DUTY REAMERS
STANDARD REAMERS
THREE-WAY DISC BIT
CIRCULATING HEADS
MUD GUNS
BALL BEARING SWING JOINTS for ALL PURPOSES

NOTES FOR THE Equipment Buyer and User

Piston Ring divisions, and The Maryland Drydock Company, a subsidiary. He is a graduate of Lehigh University where he received his degree in civil engineering.

D. W. Henke Becomes Manager Of Merla Tool Company

D. W. Henke, until recently secretary-treasurer of The Guiberson Corporation, has been announced as manager of Merla Tool Company, Dallas, Texas.



D. W. HENKE
Manager, Merla Tool Company

Henke's career with The Guiberson Corporation dates back to 1915 in Los Angeles. In 1919 he moved to Dallas. Henke was made assistant treasurer at that time, later to become secretary-treasurer. He also was secretary-treasurer of Guiberson Diesel Engine Company; vice president and treasurer of the Algord Oil Company and secretary-treasurer of the Two-Well Corporation. On April 1 he resigned these positions to become secretary, and a member of the board and executive committee of Guardian Life Insurance Corporation, Dallas. His new connection with Merla Tool Company will not alter his position with the insurance company. Serving on the executive staff of Merla Tool Company with Henke are Roy A. Lamb, in charge of sales, and C. S. Crickmer, in charge of engineering and production.

Baker Oil Tools Acquires St. Louis Plant

Baker Oil Tools, Inc., announces acquisition of the plant and equipment of Bartlesville Supply Company, at St. Louis, Missouri, where manufacture of Barsco Products will be continued.

G. D. Hall has been appointed plant manager of the St. Louis plant; C. A. Walker will continue as plant superintendent; and J. O. Buchta will be special sales representative for Barsco Products.

According to announcement, Baker Oil Tools, Inc., plans to improve manufacturing facilities at the recently acquired plant, in line with the increased importance of St. Louis as a manufacturing and distributing point for oil well tools as the Illinois fields are extended.

Other plants of Baker Oil Tools, Inc., are located at Houston, Texas, Huntington Park, California, and the original plant at Coalinga, California.

J. E. Jackson Elected Head of Pittsburgh-Des Moines Steel

J. E. Jackson has been elected president of Pittsburgh-Des Moines Company to succeed his father who died April 26, 1939. Jackson was graduated in civil engineering from Iowa State College in 1924. Since his graduation he has been actively connected with various departments of Pittsburgh-Des Moines Company and its affiliate, Pittsburgh-Des Moines Steel Company. He was manager of the incinerator department for a number of years and since 1935 has been general manager of the construction department.

John F. Eaton Joins Bethlehem Supply Corporation at Tulsa

G. S. Comstock, manager of Bethlehem Supply Corporation, Tulsa, has announced the appointment of John F. Eaton as design engineer. Eaton was formerly with Jarecki Manufacturing Company as sales engineer, and later

JOHN F. EATON
Design Engineer, Bethlehem Supply Corporation.

with the American Steel Derrick Company as mechanical engineer. More recently he was Gulf Coast Division manager for Jarecki Manufacturing Company, with headquarters at Houston, which position he resigned to join the Bethlehem organization. He is a mechanical engineering graduate of Princeton University, and is a registered professional engineer in Oklahoma.

Pictured is a Hobbs self-loading float recently shipped to Socony-Vacuum Oil Company for use in Asia. This new type of equipment was recently developed by Hobbs Manufacturing Company of Fort Worth and Houston to facilitate the loading of heavy equipment. With the aid of the Mead-Morrison winch shown on the unit, the front end of the Hobbs trailer can be lowered to the ground, thus making it into an easy-grade ramp which can then be lifted into position by the winch after the load has been pulled on or moved on under its own power.

Twin Disc Clutch Becomes Part of Link-Belt Transmission Line

Link-Belt Company, Chicago, Philadelphia, announces that in the process of broadening its line of modern power transmission equipment, Twin Disc Clutch Company, Racine, Wisconsin, has appointed it distributor for Twin Disc friction clutches and clutch couplings in all industrial fields. Engineering data, dimensions, horse powers, list prices, are given in Link-Belt's new power transmission book No. 1600, a copy of which will be sent to any reader upon request.

Spang Chalfant Official Dies Following Emergency Operation

J. D. Hardcastle, vice president of Spang Chalfant, Inc., Pittsburgh, died Monday morning, June 12, at Hollywood, California, following an emer-

NOTES FOR THE Equipment Buyer and User

gency operation which had been performed on June 9.

He was one of the oldest employees of Spang Chalfant in terms of service, in that he was continuously with the same company for 35 years.

He was born on January 10, 1881, in Carrollton, Illinois. He was a member of the Duquesne Club and Oakmont Country Club.

Interment was at St. Louis, Missouri.

Universal Atlas Cement Company Has Good Safety Record

At the Waco plant of the Universal Atlas Cement Company, United States Steel corporation subsidiary, ceremonies were held recently rededicating the Portland Cement Association Safety Trophy awarded for achieving the perfect safety record of completing the calendar year 1938 without a lost-time accident. This record actually extended from August 5, 1937, to May 3, 1939, a total of 635 days, or nearly 2 years.

From April 28, 1935, to August 4, 1937, the plant operated for 830 days, or over 2 years, without an accident. This included the entire calendar year of 1936 when the plant was originally awarded the safety trophy.

Foreign Club Organized By California Men

Realizing that a community interest exists between men who have traveled in foreign fields in the interest of oil equipment manufacturers, a group of such men has started an association in California to provide and continue social contacts between them. It is called the "Nomads."

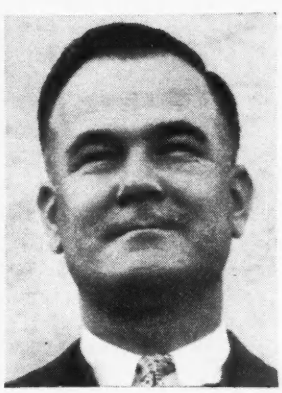
Believing that the association should be national in scope and that oil equipment representatives located in other sections of the country might wish to join in the movement, the group decided to call the original organization the Los Angeles chapter and invite others to form similar chapters in their localities. Such chapters are being formed in Houston and Tulsa.

The name "Nomads" stands for National Oil Equipment Manufacturers and Delegates Society. Its objects are strictly social, fraternal and educational and its regular meetings will consist of monthly dinners at which programs will be presented.

Active membership in the "Nomads" is limited to men who have actually visited foreign countries in the interest of oil equipment manufacturers. Associate members are men who devote a

Officers of California Chapter of Nomads

E. L. DECKER
President



F. C. RIPLEY
Vice President

W. F. BETTIS
Secretary-Treasurer

E. M. REESE
Asst. Sec'y-Treas.

HENRY PULLMAN
Sargeant-at-Arms

E. B. FOWKES
Asst. Sargeant-at-Arms

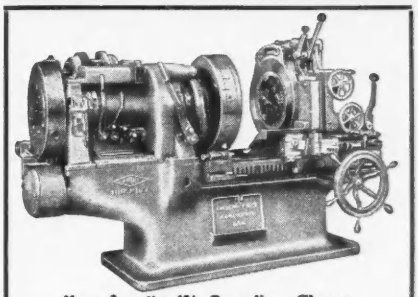
REED'S 'B-R' DRILLING BIT WITH WIRE LINE RETRACTABLE CORE BARREL

ANY NUMBER OF CORES CAN BE TAKEN (REGARDLESS OF DEPTH) WITHOUT REMOVING THE DRILL PIPE

HARD FORMATION HEAD (Interchangeable with Soft Formation Head)

REED 'B-R' Drill Collar and 3-Blade Drilling Bit with Core Barrel in position

REED ROLLER BIT CO.



New Landis 4¾ Receding Chaser Pipe Threading Machine

COMPLETE LINES

Machine Tools—Metal Working Machinery—Bolt and Pipe Threading Machines—Electric Arc Spot and Butt Welders—Hand Power and Electric Traveling Cranes—Foundry and Forge Shop Equipment

D. S. MAIR MACHINERY CORPORATION

HOUSTON
4000 Clay
Stanley Mair
Fx. 1466

DALLAS
322 Allen Bldg.
Chas. Harter
7-2874

Standco NO-SMOKE

STANDCO BRAKE LINING

for the easiest brake known. It "feeds off" evenly. Standco never scores brake rims. See page 2100 Composite Catalog.

Standco Brake Lining Co.
HOUSTON

NOTES FOR THE Equipment Buyer and User

substantial portion of their time to oil equipment export business.

Officers duly elected by the Los Angeles chapter upon completion of the organization were: E. L. Decker, Martin-Decker Corporation, president; F. C. Ripley, Emsco Derrick & Equipment Company, vice president; W. F. Bettis, M. O. Johnston Oil Field Service Corporation, secretary - treasurer; Earl Rees, Fluid Packed Pump Company, assistant secretary - treasurer; Henry Pullman, Baker Oil Tools, Incorporated, sergeant-at-arms; and E. B. Fowks, Emsco Derrick & Equipment Company, assistant sergeant-at-arms.

Other members of the Nomads in Los Angeles consist of George Anderson, Baker Oil Tools, Incorporated; J. C. Axelson, Axelson Manufacturing Company; Carlton Baker Jr., Baker Oil Tools, Incorporated; Jack Ballagh, Patterson-Ballagh Company; S. R. Bowen, S. R. Bowen & Company; B. Bronzan, Baash-Ross Tool Company; Frank Champion, Byron Jackson Company; Larry Coker, National Supply Company; Norman Dorn, Lane-Wells Company; Calvin Drake, Hydril Company; Joe Dunn, National Supply Company; John Eastman, Eastman Oil Well Supply Corporation; R. J. Eiche, Lorraine Corporation; J. E. "Brick" Elliott, Elliott Core Drilling Company; John Grant, Grant Oil Tool Company; Abe Haglund, Axelson Manufacturing Company; L. T. Hamer, Hamer Oil Tool Company; Clarence Hill, Oil Well Supply Company; Ray Humphries, Axelson Manufacturing Company; Clay Johnson, Shaffer Tool Works; Blaine Johnston, Jr., M. O. Johnston Oil Field Service; A. D. Love, Chiksan Oil Tool Company; Tom Martin, Lorraine Corporation; W. R. "Frosty" Martin, Martin-Decker Corporation; Roy McCollum, Parkersburg Rig & Reel Company; C. J. McLaren, Hughes Tool Company; Floyd Merritt, Elliott Core Drilling Company; Harry Morehouse, Wagner - Morehouse; Tom Murphy, Martin-Decker Corporation; L. J. Paddock, Stoody Company; Geo. Ratcliff, Baroid Sales Company; L. A. Rawson, Stoddard-Rawson, Incorporated; S. R. Robinson, Yowell Service Company; Hans Ross, Baash-Ross Tool Company; Wallace Sawdon, petroleum engineer; Walter Seymour, Non-Corrosive Products Company; E. R. Smith, Lane-Wells Company; Roland Smith, Byron Jackson Company; Ted Sutter, Baker Oil Tools, Incorporated; Joe Swaton, Kerotest Manufacturing Company; Harry Therolf, Eason & Therolf Tool Company; Ed Thompson, Security Engineering Corporation; Clarence White, Oil Well Manufacturing Corporation; Jack Wilcox, S. R. Bowen & Company.

Deep-Well Water Pumps

Worthington Pump and Machinery Corporation, Harrison, New Jersey, has released a circular on "Jetflo" centrifugal electric water pumps for service on wells up to 80 feet in depth.

BJ Elliott Division Sales and Service Organized

Following acquisition by Byron Jackson Company of Elliott Core Drilling Company, certain changes and additions have been made for improved sales and service facilities of products previously marketed by the Elliott organization.

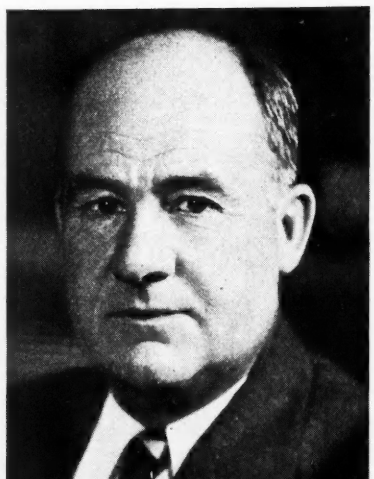
J. E. (Brick) Elliott, Reid B. Grainger and George Jacobs are continuing their association with Elliott products through BJ Elliott Division of Byron Jackson Company in the Gulf Coast, and J. D. (Joe) Hicks, previously of the drilling contracting firm of Robinson & Hicks, has been added to the staff as sales representative.

Elliott Core Drilling Company several years ago maintained a plant and sales force in Houston, and during that period Brick Elliott spent a great deal of time in Texas. He is well known to Texas and Mid-Continent oil men through that connection and the further fact that he was active in the American Association of Petroleum Geologists of which he was among the first members.

Houston Oil Field Material Company and Wilson Supply Company will act as Gulf Coast distributors; California sales and service will be handled by Pacific Cementing Company.

John H. Baird, 808 Graybar Building, 420 Lexington Avenue, New York, will continue to serve as export representative.

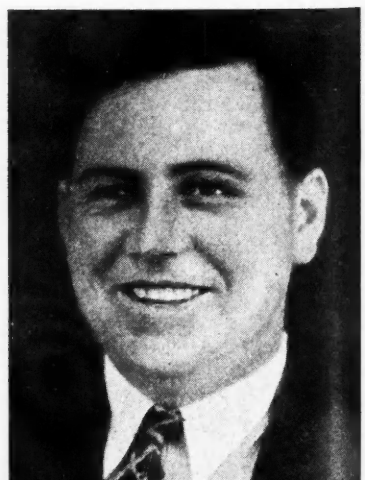
New BJ Elliott Division Sales Personnel



J. E. ELLIOTT

REID B. GRAINGER

J. D. HICKS



GEORGE JACOBS

Squeaks from the Bull Wheel

To the Point

She—How could you live without me?
He—Much cheaper.

Same Thing

"So you're engaged?"
"Yes, but I took my time about accepting him."
"You mean you waited until he actually proposed?"

Efficient

Now I hope you thoroughly understand the importance of punctuation.
Oh, yes, indeed; I always get to work on time.

Behind the 8 Ball

"Daddy and I won't be home tonight, Johnny. Do you want to sleep alone or with nursie?"
"What would you do, Daddy?"

Good Grounds

"On what grounds are you applying for a divorce?"
"Extravagance, your honor."
"How's that?"
"She kept on buying ice after I had installed an electric refrigerator."

Social Event

"Boy-o-boy did Tillie throw a party last night!"
"You don't say! Who all was there?"
"Just me and Tillie."

Authority

The junior partner had been on a visit to a distant branch office, and was giving his father a full account.
"The manager there," he said, "is apt to take too much on himself. I gave him plainly to understand he must get authority from here instead of acting too much on his own."
"Yes," said the senior dryly. "So I gather. Here's a telegram from him."
The telegram ran: "Office on fire. Please wire instructions."

Financial Wizard

"Could I have a little money for shopping today, dear?"
"Certainly. Would you rather have an old five or a new one?"
"A new one, of course."
"Here's the one—and I'm four dollars to the good."

Relieved

He had been walking with one foot on the sidewalk, and the other in the gutter, and he was not getting along very well. About a mile down the street he encountered a policeman.
"You're drunk," said the policeman.
"Oh, is that what it is?" he replied. "Thank goodness, I thought I was lame."

Skeptical

"My wife kisses me every time I come home. That's affection."
"You're wrong. That's investigation."

Very Necessary

"What's the use of having a time-table if your trains don't run by it?"
"We couldn't tell dey was runnin' late if we didn't hab a time-table."

So many people have identified the picture published in last week's "Squeaks" that the Amaruzian National Fair, which was about to go under, has been resurrected and will be held February 30, 1940, on which date tickets for those identifying Frosty Martin engaged in looking over 4 threes, will be distributed. The picture of Martin, taken several years ago in his land-going yacht, showed a winning hand which took a 30-cent pot.

Well Named

"What are we having for dessert tonight, dear?"
"Sponge cake. I sponged the eggs from Mrs. Brown, the flour from Mrs. Smith, and the milk from Mrs. Jones."

Bad for Him

"I never felt so punk in all my life."
"Do any drinking last night?"
"Yes, and when I went to bed I felt fine. But when I woke up I felt terrible. It was the sleep that did it."

Expensive

"I suppose they ask a lot for the rent of this sumptuous apartment."
"Yes, they asked Harold seven times last month."

Playing Safe

An Oriental shopkeeper, being in great financial trouble, went to a specialist in burglary and arson.
"Would you like to have a fire?" he was asked.
"No," he replied. "I prefer a burglary. In the first place it is cleaner. In the second place, if the insurance company won't pay, you've still got our goods."

Ruined

"It sure is terrible about George being married."
"What's so terrible about that?"
"Well, he was so easy to borrow money from."

Force of Habit

A banker in a business slump got a temporary job as a gasoline station attendant and a customer drawing up to the pump requested ten gallons of gas.
Said the banker: "How far are you traveling?"
The customer explained his journey in detail, whereupon the ex-banker said: "Don't you think you could get along with five."

Not Negotiable

"No, Sonny, I'm rich. I have you and Billy and you are worth millions to me."
"Then couldn't you take a mortgage on Billy and buy me a pair of roller skates, Mom?"

WELLS NEED

Cleaning Too!

You'll smile too, when you see the increased oil after cleaning-out with a MILLER . . . the Sand Pump in World-Wide use.

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet. 5/32-inch wall thickness in REGULAR Type, ¼-inch wall tubes HEAVY Type Sand Pumps.

INTERCHANGEABLE BOTTOMS
To Meet Every Condition

● BAILER BOTTOM
With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.

● SAND BOTTOM
Used when tools are run and when well is shot to quickly remove loose material.

● STAR BOTTOM
Used for cutting the sand loose.

● CHISEL BOTTOM
(In Pump)
With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

Write for Descriptive Folder and Price List

See Pages 1564-65 COMPOSITE CATALOG

PATENTED
NO. 1370340
NO. 1523608
NO. 1767260
NO. 1862628
NO. 1956028
NO. 2055687

MILLER Sand Pump Co.

General Offices and Factory:
OKLAHOMA CITY, OKLAHOMA
1524 S.E. 29th P. O. Box 4516 Tel. 7-6884

Branches:

SAPULPA	KILGORE	HOUSTON
Okla.	Texas	Texas
Tel: 341	Tel: 545	Tel: P-2841

FOR SALE BY SUPPLY STORES EVERYWHERE

INDEX TO ADVERTISERS

A

	Page
*J. S. Abercrombie Co.	—
*Abercrombie Pump Co.	—
Acme Gas Lift Co.	—
Administration Nacional de Combustibles	64
Ajax Iron Works	—
*Allsteel Products Manufacturing Co.	—
*Alten's Foundry & Machine Works	—
*American Askania Corp.	—
American Assn. of Petroleum Geologists	—
*American Cable Division of American Chain & Cable Co.	—
American Cast Iron Pipe Co.	—
*American Hammered Piston Ring Division of Koppers Co.	—
*American Iron & Machine Works Co.	—
*American Meter Co.	—
*American Sand-Banum Co.	—
*American Steel & Wire Co.	—
*Athey Truss Wheel Co.	—
Atlas Drop Forge Co.	—
Atlas Powder Co.	—
*Axelson Manufacturing Co.	—

B

*Baash-Ross Tool Co.	33
*Baker Oil Tools, Inc.	3
*Baldwin-Duckworth Chain Corp.	—
*Bantam Bearings Corp.	—
*Baroid Sales Co.	—
William M. Barret, Inc.	74
*Bartlett-Hayward Division of Koppers Co.	—
*Beaumont Iron Works Co.	—
*Bethlehem Steel Co.	—
*Black, Sivalls & Bryson	—
Hotel Blackstone	—
*Bradford Motor Works	—
*The Brewster Co.	—
*The Bridgeport Machine Co.	—
*Broderick & Bascom Rope Co.	—
A. M. Byers Co.	—
Byron Jackson Co.	First Cover

C

Jo H. Cable	—
*Cameron Iron Works	31
*Cardwell Manufacturing Co.	—
Carnegie-Illinois Steel Corp.	—
*J. I. Case Co.	—
*Caterpillar Tractor Co.	—
*Chain Belt Co.	—
*Chiksan Oil Tool Co.	77
*Clark Bros. Co.	—
*Climax Molybdenum Co.	—
Columbian Steel Tank Co.	—
Continental Oil Co.	—
The Continental Supply Co.	—
Fred E. Cooper Co.	—
*The Cooper-Bessemer Corp.	—
Core Drilling Co.	—
*Crane Co.	6
*Crum-Brainard	4
*Cummins Engine Co.	—
W. H. Curtin Co.	—

D

*Darling Valve & Manufacturing Co.	76
Thos Devlin Manufacturing Co.	72
DeWitt Operated Hotels	—
*Diamond Chain & Manufacturing Co.	—
Dowell Incorporated	—
*The Dragon Manufacturing Co.	—
E. I. du Pont de Nemours & Co.	—

E

*Eastman Oil Well Survey Co.	—
Economy Electric Lantern Co.	—
*Elliott Core Drilling Co.	—
Elmax Construction Co.	66
Enardo Foundry & Manufacturing Co.	—

F

*Geo. E. Failing Supply Co.	—
First National Bank & Trust Co. of Tulsa	—
*Fluid Packed Pump Company	—
Ford Motor Co.	5
The Fort Worth Laboratories	74
The Benjamin Franklin Hotel	—
*Franks Manufacturing Co.	35
Frick-Reid Supply Corp.	—
Frost National Bank	—

G

*Gardner-Denver Co.	—
*The Garlock Packing Co.	69
*Gaso Pump & Burner Manufacturing Co.	—
*General Electric Co.	—
General Motors Corp.	—
Geophysical Service, Inc.	—
*Goodyear Tire & Rubber Co.	—
*H. P. Gott Manufacturing Co.	—
*Grant Oil Tool Co.	—
*Gray Tool Co.	—
*Green Head Bit & Supply Co.	—
*The Guiberson Corp.	—
Gulf Envelope Co.	—
Gulf Publishing Co.	4

H

*Halliburton Oil Well Cementing Co.	—
Hardway & Cathey	74
*Harnischfeger Corp.	—
*Haynes Stellite Co.	—
*Hazard Wire Rope Division of American Chain & Cable Co.	Third Cover
The Hercules Powder Co.	—
The Hercules Steel Products Co.	—
Hewitt Rubber Corp.	—
Hoard Exploration Co.	74
Houston Laboratories	74
*Hughes Tool Co.	Fourth Cover
Humble Oil & Refining Co.	—
*Hyatt Bearings Division	—

I

The Inferno Co.	—
*Ingersoll-Rand Co.	—
*International Harvester Co.	—
*The International Nickel Co.	23

J

*Jarecki Manufacturing Co.	—
*Jensen Brothers Manufacturing Co.	—
*Johns-Manville	63
The Jones Oil Co.	—
The S. M. Jones Co.	—
*Jones & Laughlin Steel Corp.	—

K

The Kennedy Valve Manufacturing Co.	—
*Keuffel and Esser Co.	—
Keystone Driller Co.	—
*Koppers Co.	—

L

*Laminated Shim Co.	—
Landis Machine Co.	—
*Lane-Wells Co.	—
*Larkin Packer Co.	—
*The Layne & Bowler Co.	—
Le Roi Co.	—
Lee Rubber and Tire Corp.	—
Hotel Lenox	—
*A. Leschen & Sons Rope Co.	—
*The Lincoln Electric Co.	—
*Link Belt Co.	—
Lone Star Cement Corp.	Second Cover
*Lucey Boiler & Manufacturing Co.	—
*The Ludlow Valve Manufacturing Co.	—
*Lufkin Foundry & Machine Co.	—

M

*MacClatchie Manufacturing Co.	—
MacWhyte Co.	—
*D. S. Mair Machinery Corp.	79
*Maloney Tank Manufacturing Co.	—
Manhattan Rubber Division	—
Marmon-Herrington Co.	—
*Martin-Decker Corp.	—
Hotel McAlpin	—
McGill Manufacturing Co.	71
McKissick Products Corp.	—
*Merco Nordstrom Valve Co.	—
*Metric Metal Works	—
*Miller Sand Pump Co.	81
*Mission Manufacturing Co.	10
*Lee C. Moore & Co.	—
*Motor Improvements, Inc.	—
Mudrite Products Co.	—

N

National Bank of Tulsa	—
*National Lead Co.	—
The National Supply Co.	25
National Tube Co.	—
*New Deal Specialty Co.	—
*Novo Engine Co.	—

O

*O.C.S. Manufacturing Co.	—
*Walter O'Bannon Co.	—
*Oil Center Tool Co.	—
*Oil City Brass Works	—
The Oil Weekly	61
Oil Well Supply Co.	—

P

*The Parkersburg Rig & Reel Co.	—
*Patterson Ballagh Corp.	39
*Pelican Well Tool & Supply Co.	68
Petroleum Electric Power Association	27
Petroleum Rectifying Co. of California	—
Petty Geophysical Engineering Co.	—
Philadelphia Gear Works	—
*Pittsburgh Equitable Meter Co.	—
*Pittsburgh Steel Co.	37
Hotel Pittsburgher	—
Plaza Hotels	—
Plymouth Cordage Co.	—
*Portable Rig Co.	—

R

Raybestos-Manhattan	—
Reading-Pratt & Cady Division of American Chain & Cable Co.	—
*Rector Well Equipment Co.	—
*Reda Pump Co.	—
*Reed Roller Bit Co.	79
*Regan Forge & Engineering Co.	—
Reliable Supply Co.	—
*Republic Steel Corp.	—
*The Ridge Tool Co.	—

S

Sam Houston Hotel	—
Jack A. Schley	74
*Schlumberger Well Surveying Corp.	29
The Second National Bank of Houston	—
Seismograph Service Corp.	—
Shell	—
*SKF Industries, Inc.	—
A. O. Smith Corp.	—
*E. M. Smith Co.	61
*Howard Smith Co.	—
*South Chester Tube Co.	—
Southern Engine & Pump Co.	60
Southern Pacific Lines	—
*Spang & Co.	—
Spang Chalfant, Inc.	—
*Sperry-Sun Well Surveying Co.	—
*Standco Brake Lining Co.	79
*Star Drilling Machine Co.	—
Stevens Hotel	—

T

*Templeton, Kenly & Co.	—
Texaco Development Corp.	—
The Texas Corp.	—
Texas Electric Steel Casting Co.	—
Texas Foundries, Inc.	—
*Texas Iron Works	—
Thermoid Rubber, Division of Thermoid Company	—
*The Timken Roller Bearing Co.	—
Edgar Tobin Aerial Surveys	—
Town House Hotel	—
*Tretolite Co.	—

U

*Union Wire Rope Corp.	—
Union Carbide & Carbon Corp.	—
*Unit Rig & Equipment Co.	—
*United States Rubber Co.	—
United States Steel Corp.	—
*Universal Atlas Cement Co.	—

W

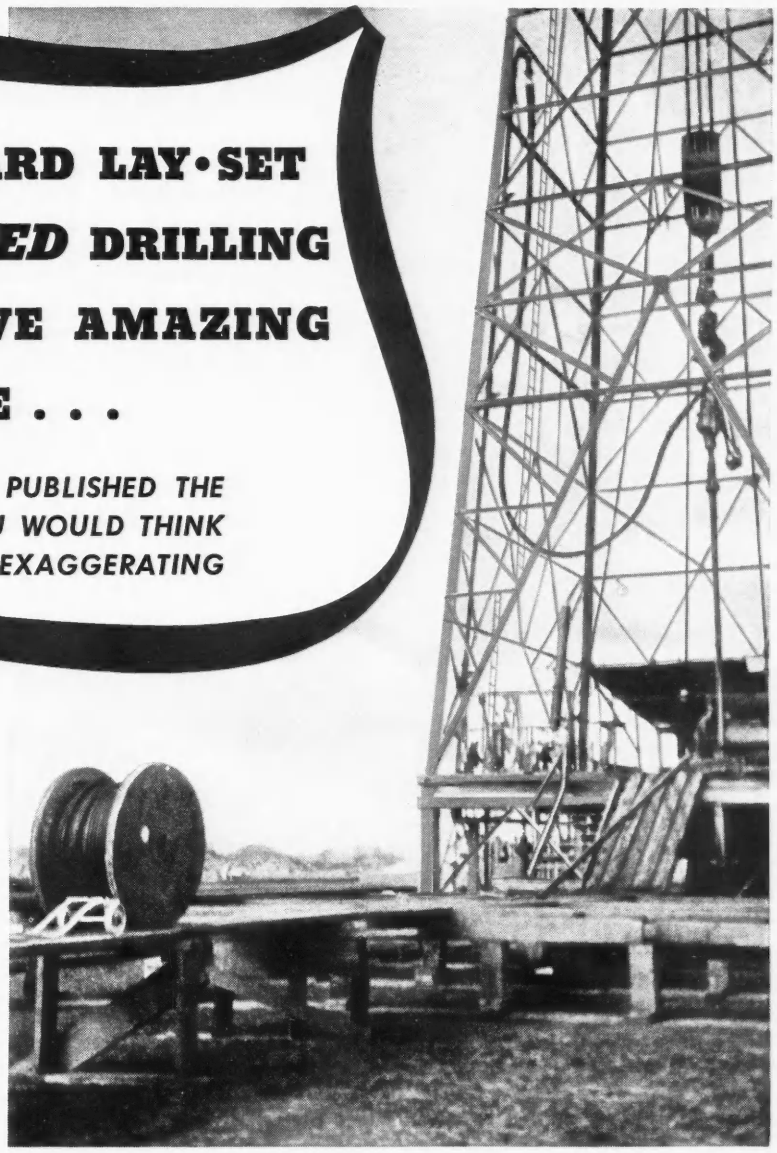
Warner & Swasey Co.	—
The Watson-Stillman Co.	—
*Waukesha Motor Co.	—
Webster Engineering Co.	—
*Westinghouse Electric & Manufacturing Co.	—
*The Wheland Co.	—
*Wickwire Spencer Steel Co.	—
*J. H. Williams & Co.	—
Paul B. Williamson	—
*Wilson Supply Co.	40
Witte Engine Works	—
*Worthington Pump & Machinery Corp.	—
Wyatt Metal & Boiler Works	—

Y

Youngstown Sheet & Tube Co.	8

This HAZARD LAY·SET *PREFORMED* DRILLING LINE GAVE AMAZING SERVICE . . .

. . . IF WE PUBLISHED THE FACTS YOU WOULD THINK WE WERE EXAGGERATING



● The LAY-SET Preformed drilling line on this reel is through. Retired. It has done its work—spent its life drilling well after well in the Fairbanks, Texas field. If we told you exactly how many wells it drilled you would think we were either mistaken or exaggerating. Even now the line is in such good condition, the driller didn't want to take it off, but the Pusher said: "No—take it off. We've had more than our value out of it. Put on another LAY-SET Green Strand."

That's the kind of service Hazard LAY-SET Preformed lines have been giving drillers in practically every field for fourteen years. And, it's the preforming that does it. Preforming makes LAY-SET Rotary Lines relaxed, more limber and flexible, easier to handle. LAY-SET lines are free of internal torsional stresses and therefore free to work better, easier and longer. For rotary work specify HAZARD LAY-SET Preformed Green Strand. All Hazard ropes made of Improved Plow Steel are Identified with the Green Strand.

GREEN SIGNIFIES SAFETY

BUY ACCO QUALITY *whether for Hazard Drilling Lines—American Welded and Weldless Chain—Ford Chain Blocks—Page Chain Link Fence—Page Welding Wire—Reading, Pratt & Cady Valves or any of the other 137 ACCO Industrial Products.*

Send today for this constructive folder

HAZARD WIRE ROPE DIVISION

ESTABLISHED 1846

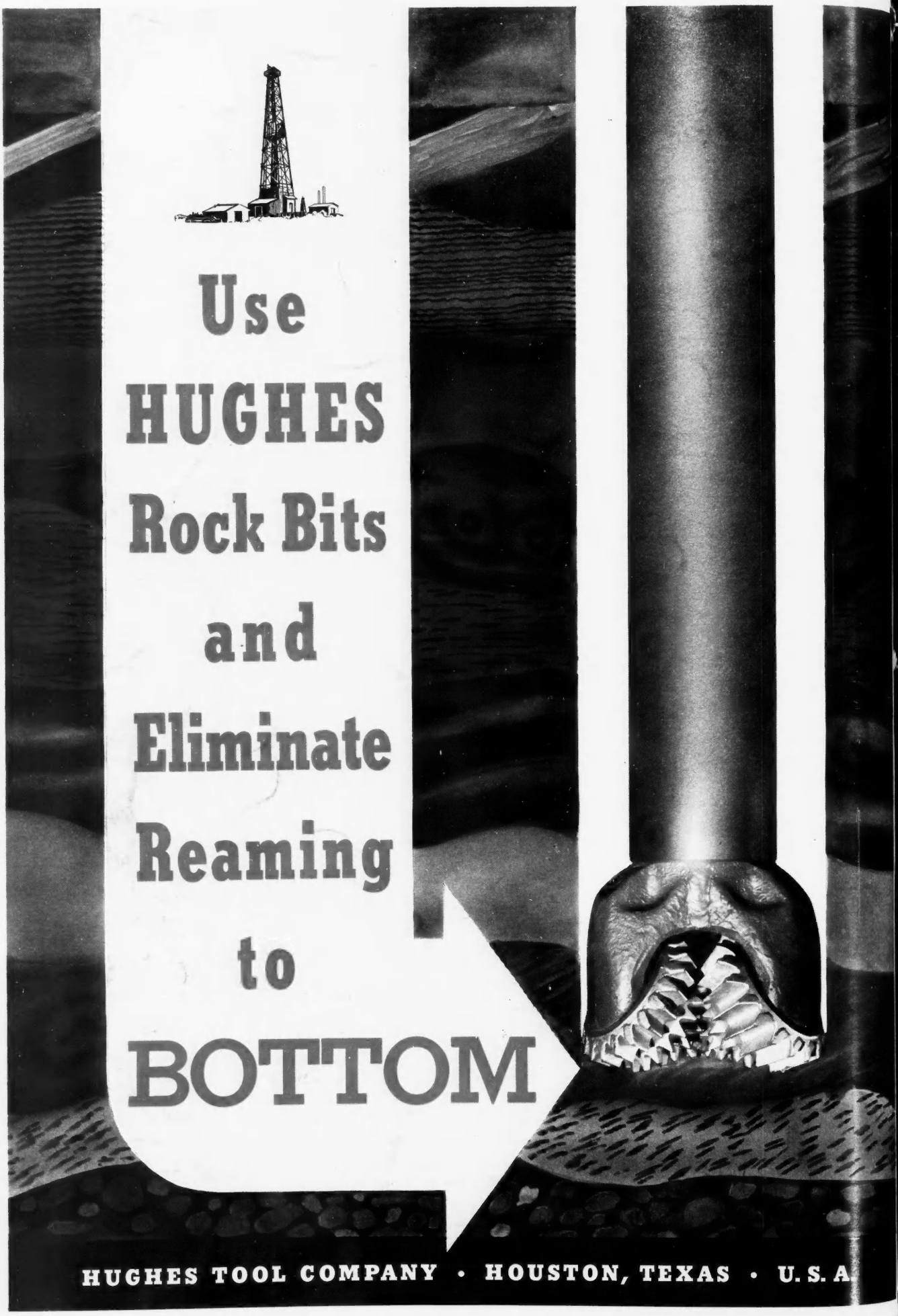
WILKES-BARRE, PENNSYLVANIA

Branches or Distributors in All Important Oil Fields

See our exhibit, Metals Building, New York World's Fair

AMERICAN CHAIN & CABLE COMPANY, Inc.

AMERICAN CHAIN DIVISION • AMERICAN CABLE DIVISION • ANDREW C. CAMPBELL DIVISION • FORD CHAIN BLOCK DIVISION • HAZARD WIRE ROPE DIVISION • HIGHLAND IRON AND STEEL DIVISION • MANLEY MANUFACTURING DIVISION • OWEN SILENT SPRING COMPANY, INC. • PAGE STEEL AND WIRE DIVISION • READING-PRATT & CADY DIVISION • READING STEEL CASTING DIVISION • WRIGHT MANUFACTURING DIVISION • IN CANADA: DOMINION CHAIN COMPANY, LTD. • IN ENGLAND: BRITISH WIRE PRODUCTS, LTD. • THE PARSONS CHAIN COMPANY, LTD. • *In Business for Your Safety*


Use
HUGHES
Rock Bits
and
Eliminate
Reaming
to
BOTTOM
HUGHES TOOL COMPANY · HOUSTON, TEXAS · U.S.A.

MASS. INST. OF TECH.
JUN 29
LIBRARY

when you use

Hughes "Tailor-Made" Rock Bits

FULL GAUGE HOLE ELIMINATES REAMING

HUGHES TOOL CO., HOUSTON, TEXAS

GREATER THREAD ACCURACY OF J&L SEAMLESS CASING AND TUBING SPEEDS UP SETTING TIME • • • • HELPS CUT SETTING COSTS • • • •

Now joints can be stabbed, spun in and tonged tight with less delay and greater safety

Now your time in setting casing is reduced and the job completed faster and at a greater profit. For all precautions are taken in our mill to make sure every joint of J & L Seamless Casing can be stabbed, spun in and tonged tight without delay. This minimizes every chance of threads galling or couplings turning to slow up your operations. J & L Oil Country Tubular Products are made of Controlled Quality Steel — your assurance of long, dependable service.

Using instruments of jeweler's precision the threads of every length of J & L Seamless Oil Country Tubular goods are inspected for taper, depth, pitch and size before the pipe leaves the plant.

Guy Ray, a progressive driller, who recently cased a well with J & L 100% inspected product writes us "this is the best string of pipe I have ever run. We didn't have a single leaker in the string due to the fact that the collars were perfectly set at the mill."

J & L distributors, located in every leading field, can supply you with J & L A.P.I. Oil Country Pipe. When you order pipe for your next operation, call in a J & L representative.

J&L PIPE

JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

PITTSBURGH, PENNSYLVANIA

J & L—PARTNER IN PROGRESS TO AMERICAN INDUSTR

OUR REASONS WHY THEY SAVE:

t weight — transportation saving will pay your purchase
e in five years.

pact — designed of fewest parts with careful steel analysis.
y wearing part heat-treated for wear resistance.

ion clutch driven — for faster drilling, cushioning the
ks and making operation much easier.

well Draw Works will "drill-up," eliminating stuck drill
and "twist-offs" when cave-in occurs.

reasons why Cardwell equipment will save YOU money.

us the formation data that is a problem; we may
ble to assist you.

e us today; we'll gladly send you photographs, speci-
ions and prices; or see our nearest representative.

R. G. RAPP, PRESIDENT
H. E. RAPP, VICE-PRESIDENT

A. L. SCHELLHAMMER, TREASURER
STERLING WILLIAMS, SECRETARY

DENVER PRODUCING & REFINING COMPANY
A DELAWARE CORPORATION
2212 FIRST NATIONAL BUILDING
OKLAHOMA CITY, OKLAHOMA

April 18, 1939

The All Steel Products Manufacturing Company
Wichita, Kansas

Gentlemen:

We know that you will be interested in knowing of some of the work our "Cardwell" rigs have done for us.

In 1934 we first bought a Single Drum Model R on Double Drum Frame. After a year and a half of well servicing in the Oklahoma City Field at an average of 20 hours a day, we added your cathead shaft and rotary drive and moved it to Texas and drilled about twenty-five (25) 2,000 ft. wells. After this, we moved it back to the St. Louis, Oklahoma, field where it is now servicing 4,200 ft. wells.

The next unit we purchased was a Model R Double Drum Draw Works. The first job for this unit was bailing a 7,600 ft. well in the Moore field. We then moved it to the Seminole area and drilled eight (8) 4,200 ft. wells and it is now on its ninth well.

Our third unit was purchased in November, 1937; a Model R Double Drum Combination Drilling Rig. We moved this directly to West Texas and drilled nine 5,100 ft. wells using 4" drill pipe to 4,700 ft., then 3" drill pipe to completion. This unit is now drilling 5,400 ft. in a test well in the Seminole area.

We have been very well satisfied with all of our "Cardwell" rigs. They get the job done with a small investment and save a lot of time in moving-in and rigging-up. The total repair on the three rigs amount to a little over 4¢ per annum. Good service, long life and low upkeep make our investment in "Cardwell" equipment look better every day.

Yours very truly,

DENVER PROD. & REFG. COMPANY
H. E. RAPP
General Supt.

HER:MA

Our Model R Draw Works now available with 200 H.P. and will drill economically to 7,500 ft. with 3½" drill pipe or 6,000 ft. with 4½" drill pipe.

ALL STEEL CARDWELL
U.S. TRADE MARK PAT. OFFICE
TRADE MARK INSURES HIGHEST QUALITY AT LOWEST PRICE

CARDWELL MFG. CO. INC.

FORMERLY ALLSTEEL PRODUCTS MFG. CO.
P. O. Drawer 2001 - Cable Addresses: "ALLSTEEL", WICHITA - "CARDSTEEL", NEW YORK
Wichita, Kansas, U. S. A.

• We Build 62 Models and Sizes of Servicing Winches and Drilling Rigs — Send your well depths and details of your well equipment for recommended model and size.

F. J. OLSON, Export Manager, 570 Lexington Avenue, New York City, Phone Plaza 5-9325

R. B. CHAPIN
Wichita, Kansas
Phone 4-4381

PARTS STOCK STORE
Salem, Illinois
Phone 2901

B. O. BEEMER
Midland, Texas
Phone 1541

EARL MARSH
Shreveport, Louisiana
Phone 2-3072

GROVER GEISELMAN
Houston, Texas
Phone Hadley 7444

JACK GRIZZLE
Wichita, Kansas
Phone 4-4381

D. W. RICHARDSON
San Antonio, Texas
Phone C-1221

B. J. LORTS
Wichita, Kansas
Phone 4-4381

H. F. RYAN
Tulsa, Oklahoma
Phone 3-2531

JACK BROWN
Calgary, Alberta
Phone M 5916

FOR SHALLOW HOLE DRILLERS!

IT'S THE NEW MARTIN-DECKER SLIM-HOLE WEIGHT INDICATOR

. . . and, brother, it's got **performance** written all over it.

It's as compact and solid as a welterweight and will handle your toughest shallow-hole jobs right down to the last foot.

Five interchangeable dials, calibrated both sides, handle all standard string-ups and line sizes from 5/8" to 1 1/4". And a new type clamp is used that requires no adjustments, no shims, for handling any of these lines.

Then check this—it has a built-in pulsation damper that works **automatically** . . . keeps the instrument **always** sensitive, **always** accurate to weight changes . . . and **always** readable even in the roughest drilling.

Another thing—the all-bronze gauge case is virtually one solid piece and the diaphragm unit is built right into it . . . a new type construction worked out by Martin-Decker engineers especially for the **Slim-Hole** Indicator. No water can get in, no fluid can leak out, and no pumping or adjusting is necessary.

You can't beat this instrument for accurate weight control on quick jobs and shallow operations. So if that's where your work is, find out about this new instrument from your nearest Martin-Decker or Reed Roller Bit representative. Or drop us a line and we'll gladly send complete information!

HOME OF THE WEIGHT INDICATOR

MARTIN DECKER CORP.

LONG BEACH, CALIFORNIA

SAN JOAQUIN VALLEY: A. F. McQUISTON, BAKERSFIELD, CALIFORNIA
MID-CONTINENT DISTRIBUTOR: REED ROLLER BIT COMPANY, HOUSTON, TEXAS

Representatives for Manufacturers Wanted

From time to time The OIL WEEKLY is requested by manufacturers to suggest possible sales representatives. Sometimes the manufacturer is looking for a sales company to represent it in a particular area. Occasionally the manufacturer desires that we suggest a salesman for an area.

To handle these requests we maintain what we call a "representation file."

If you are handling a line of oil country equipment and desire to add to that line, we shall be pleased, upon application, to provide you with one of our standard forms to be filled out and placed in this "representation file."

ADDRESS

The OIL WEEKLY, Box 2811, Houston, Texas

Attention Service Department

LOOKING AHEAD

WITH THE EDITOR

Report on A.P.I. Research on Oil-Well Cements.

POSSIBLY one of the most valuable studies undertaken in recent years by the American Petroleum Institute's Division of Production is that on oil-well cements. Long strides have been made toward solution of the multitude of cement problems in recent years with respect to methods, materials and appliances for evaluative purposes.

Although tests made in connection with this research have contributed to the solution of cementing problems, their development and application have not been coordinated. Therefore, an article which presents a compilation of methods for making special tests of oil-well cements and which provides specific information as to the practical interpretation and application of results of these tests is a most valuable piece of literature.

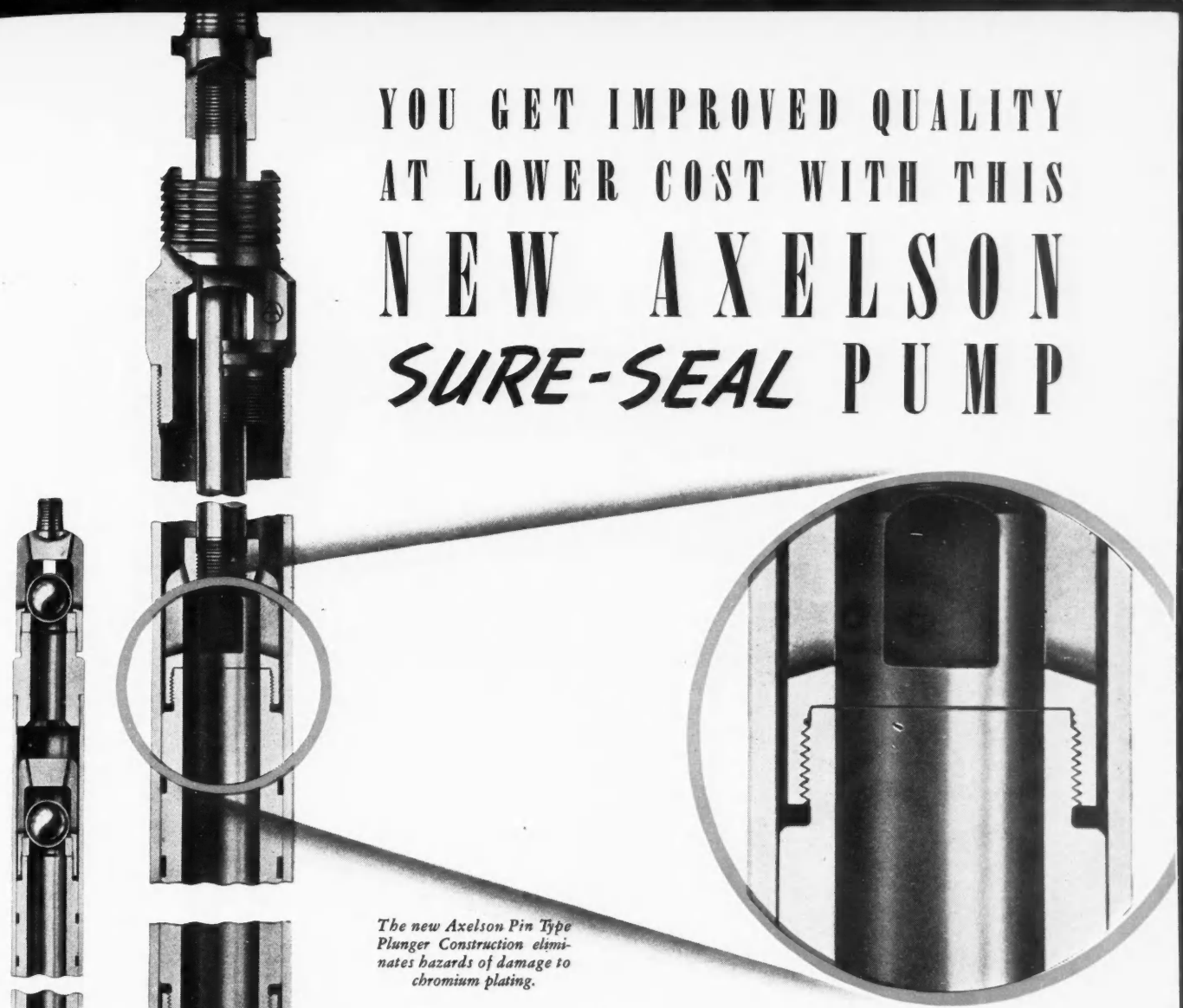
Graphically Illustrated

This is exactly what W. W. Robinson, chairman of the A.P.I. subcommittee on Oil-Well Cements has done in writing up the results of the committee's work on this subject. A very valuable part of the report is the detailed sets of photographs showing how each step in the different tests of cement are made.

The report is to constitute a series of two articles in THE OIL WEEKLY, publication to start in an early issue.

The OIL WEEKLY. Published every Monday. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

YOU GET IMPROVED QUALITY AT LOWER COST WITH THIS NEW AXELSON *SURE-SEAL* PUMP



The new Axelson Pin Type Plunger Construction eliminates hazards of damage to chromium plating.

The simplified design of Axelson Sure-Seal Pumps gives you the double benefit of lower cost and more efficient operation. Based on the Axelson metal-to-metal seal, the chromium-plated plunger operates in a barrel tube accurately honed to size and mirror finish. New pin type plunger construction (pat. pend.) eliminates the possibility of swelling either or both ends of close fitting plungers which would result in galling and reduced pump life. This construction also eliminates hazards of damaging the chromium plating where this type of plunger is used. Axelson cup-type hold-downs seat snugly in old barrels and hold pumps in proper operating position. All parts are tested many times during manufacture and checked with "Go" and "No Go" gauges to assure full interchangeability in assembly.

Sure-Seal Pumps are available in traveling or stationary type in many sizes and combinations. Any of the following combinations can be used: anchor hold-downs, 2-cup or 3-cup hold-downs, top-lock hold-downs, top-cup hold-downs, heavy duty cages and double valves.

Ask your Axelson representative about these new Sure-Seal Pumps or send for description. *Axelson's 3 complete lines of Deep Well Plunger Pumps—Standard Liner Pumps (T. S. L. & R. S. L.), Sure-Seal Pumps, Kup-Pak Pumps—are built to meet every pumping condition in every price range.*

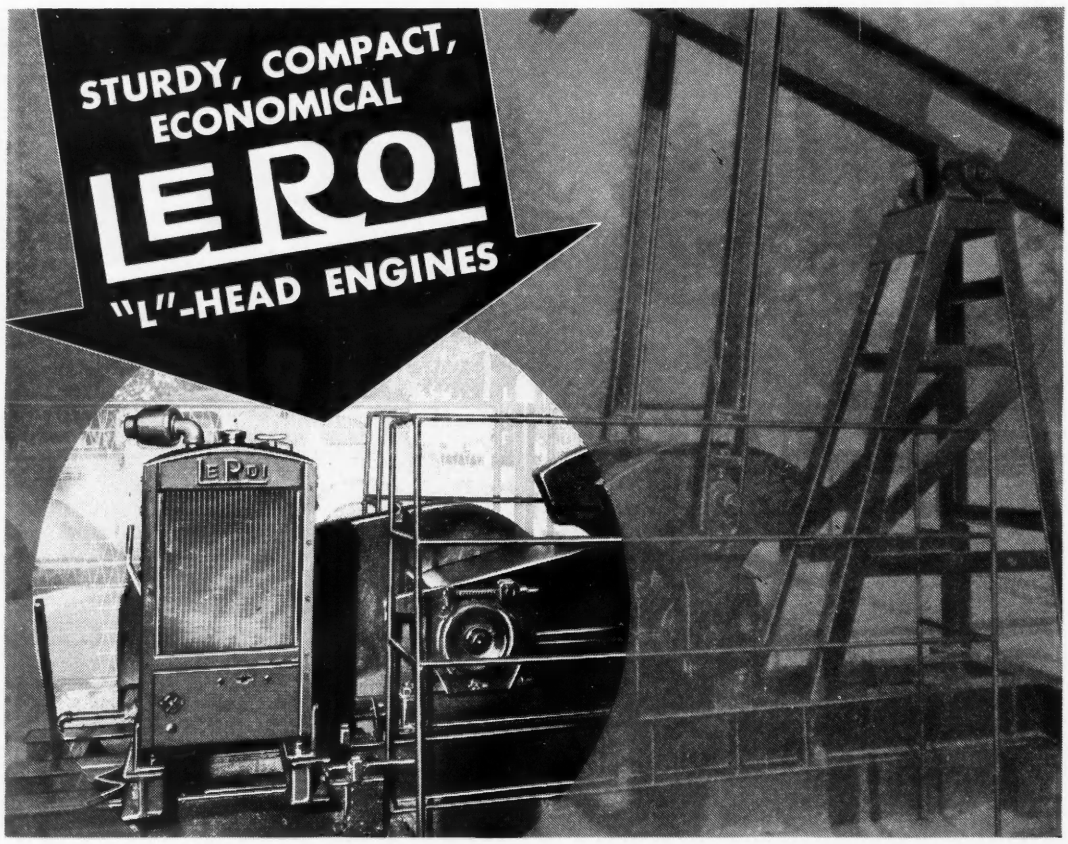
AXELSON MANUFACTURING CO.
P.O. Box 98, Vernon Station, Los Angeles • St. Louis • 50 Church St., New York • Tulsa • Mid-Continent and Eastern Distributor: Frick-Reid Supply Corp. • Rocky Mountain Distributor: Great Northern Tool & Supply Co. • Foreign Representatives: "COSMOS" Soc. in Nume Colectiv, Bucharest, Roumania • Direct Factory Representative, Bucharest, Roumania • Industrial Agencies, Ltd., San Fernando, Trinidad, British West Indies • Factory Representative, Maracaibo, Venezuela • Armco International Corp., Buenos Aires, Arg.

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

RITE TODAY for a
py of this 62-page
ook that tells how
xelson Sucker Rods are
ade and why.

AXELSON SELLS & *SERVICES* DEEP WELL PLUNGER PUMPS AND SUCKER RODS....

SHALLOW FIELD PUMPING . . .

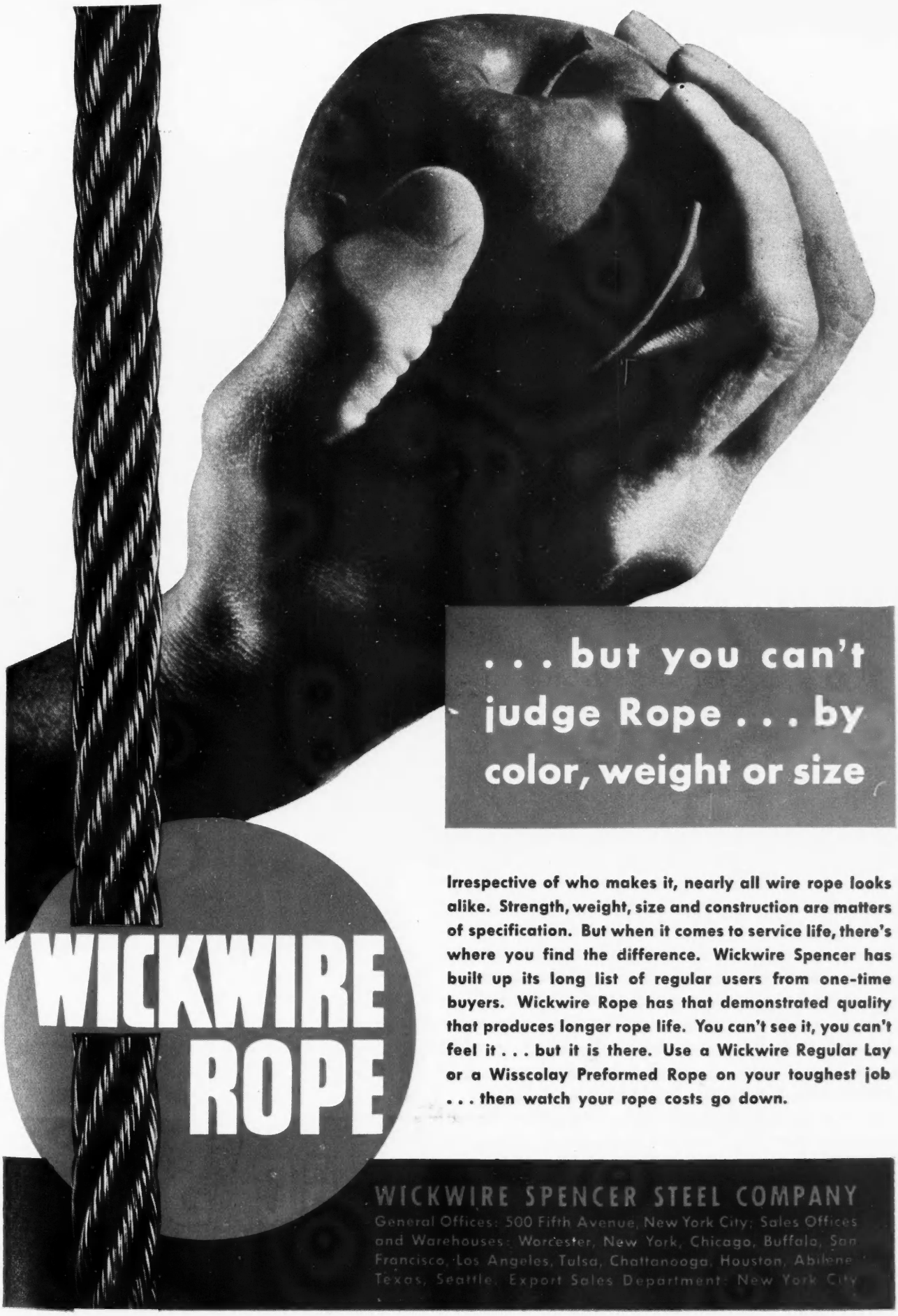


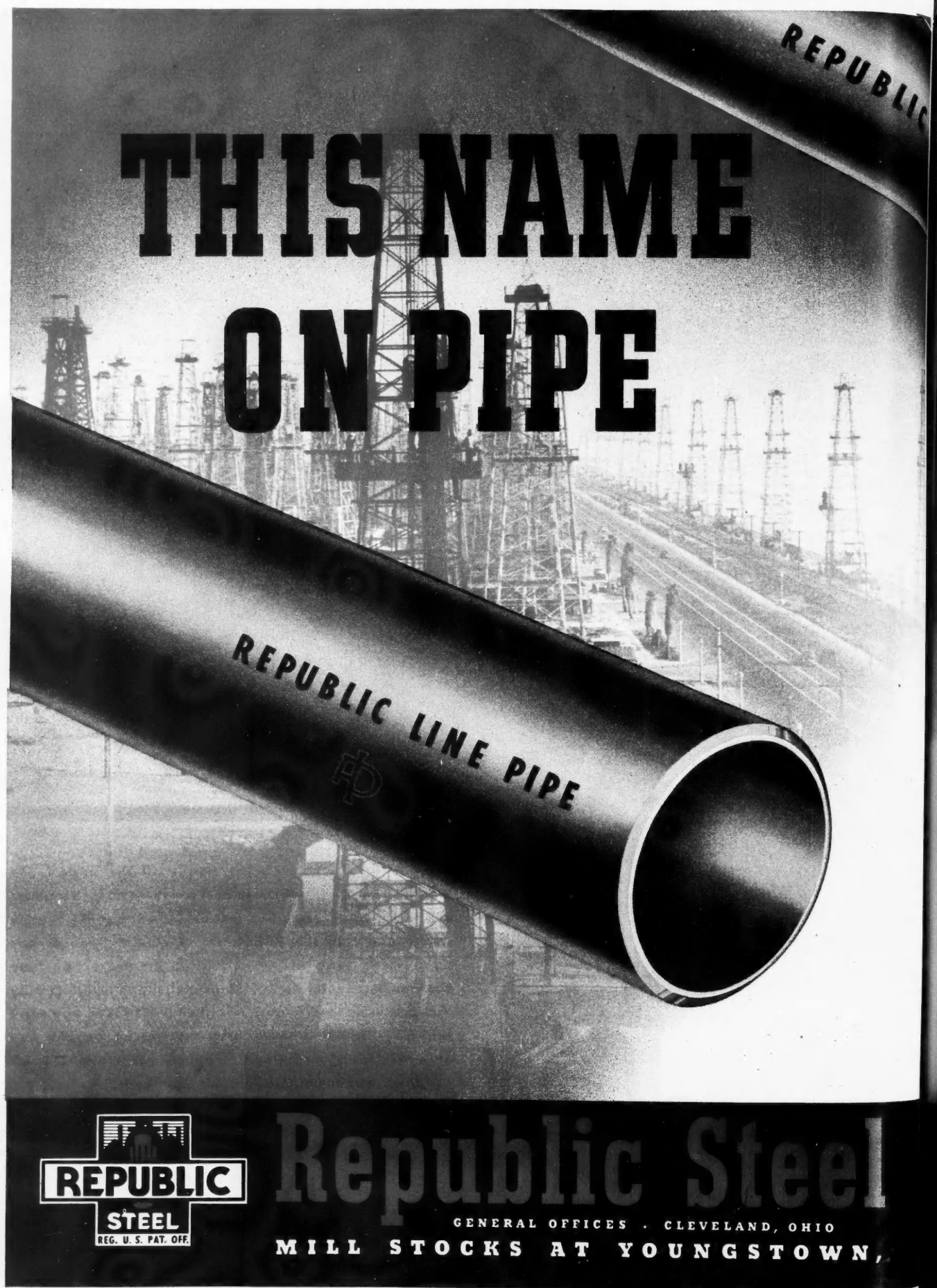
Le Roi supplements its full range of dependable valve-in-head engines for oil field service with a new series of sturdy, compact "L"-head engines.

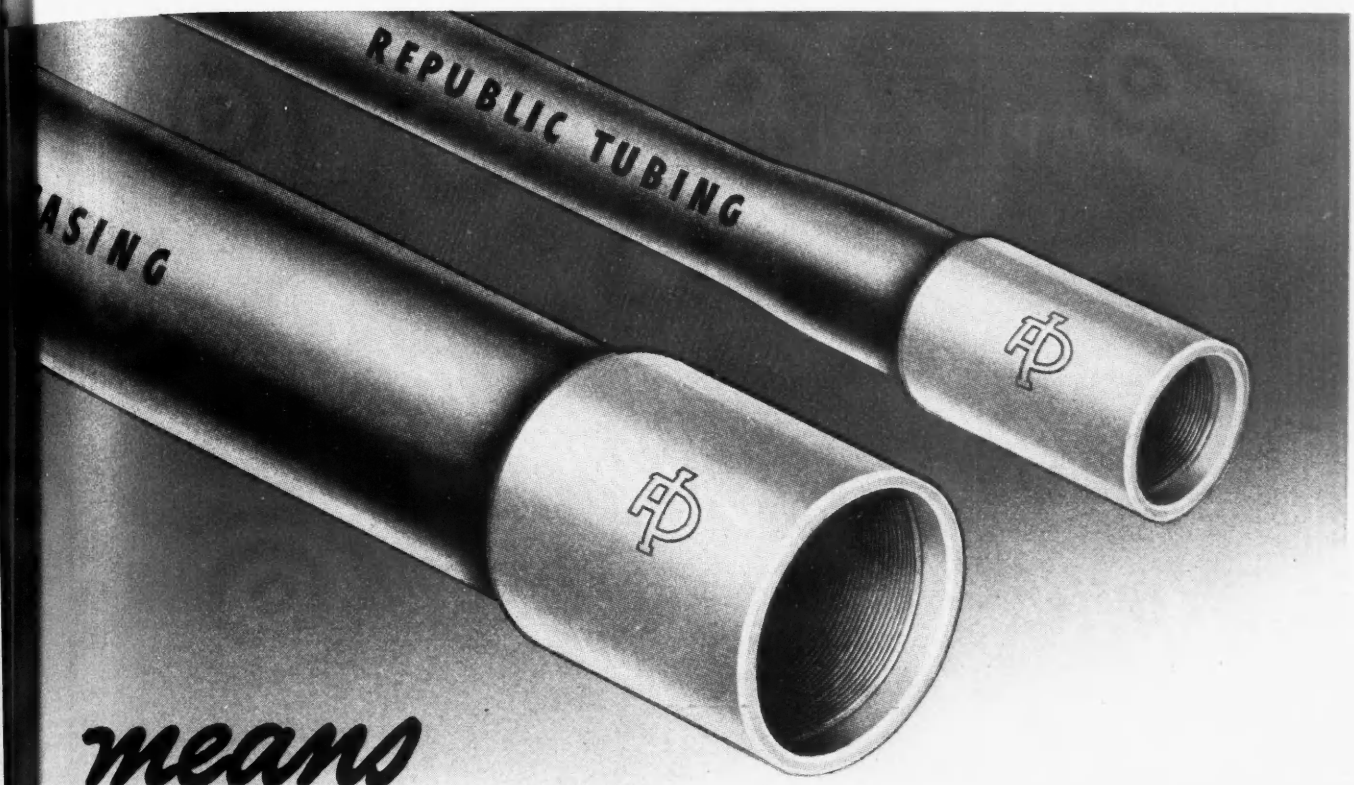
Available in three sizes for actual pump loads ranging from 2½ to 15 HP, the Le Roi "L"-head units offer many features not usually included in this class of industrial engine, such as the heavy duty Twin Disc oil field type clutch and power take-off, and the extra large bell housing enclosing a flywheel nearly twice as heavy as that commonly used on ordinary engines of comparable size — an important contributing factor to the unusually smooth operation of Le Roi shallow-field pumping engines. Le Roi engines burn gasoline or natural gas.

Write for Bulletin PL, giving complete information on this class of Le Roi Engines

LE ROI COMPANY
MILWAUKEE, WISCONSIN • TULSA, OKLAHOMA


. . . but you can't judge Rope . . . by color, weight or size
WICKWIRE ROPE
Irrespective of who makes it, nearly all wire rope looks alike. Strength, weight, size and construction are matters of specification. But when it comes to service life, there's where you find the difference. Wickwire Spencer has built up its long list of regular users from one-time buyers. Wickwire Rope has that demonstrated quality that produces longer rope life. You can't see it, you can't feel it . . . but it is there. Use a Wickwire Regular Lay or a Wisscolay Preformed Rope on your toughest job . . . then watch your rope costs go down.
WICKWIRE SPENCER STEEL COMPANY
General Offices: 500 Fifth Avenue, New York City; Sales Offices and Warehouses: Worcester, New York, Chicago, Buffalo, San Francisco, Los Angeles, Tulsa, Chattanooga, Houston, Abilene Texas, Seattle. Export Sales Department: New York City


REPUBLIC
THIS NAME
ON PIPE
REPUBLIC LINE PIPE
REPUBLIC
STEEL
REG. U. S. PAT. OFF.
Republic Steel
GENERAL OFFICES . CLEVELAND, OHIO
MILL STOCKS AT YOUNGSTOWN,



means

complete satisfaction

OTHER REPUBLIC STEEL PRODUCTS FOR USE IN THE OIL COUNTRY

REPUBLIC ALLOY AND CARBON STEELS

REPUBLIC UPSON QUALITY HEADED AND THREADED PRODUCTS

ELECTRUNITE* BOILER AND CONDENSER TUBES

TRUSCON STANDARD STEEL BUILDINGS

ENDURO* STAINLESS AND HEAT-RESISTING STEELS

NILES STEEL SHIPPING CONTAINERS TIN PLATE

REPUBLIC WIRE NAILS AND STAPLES

BERLOY* STEEL SHELVING BINS AND LOCKERS

REPUBLIC SHEETS, LIGHT PLATES AND ROOFING PRODUCTS

REPUBLIC WOVEN WIRE FENCING BARBED WIRE AND STEEL FENCE POSTS

TONCAN* IRON CULVERTS AND SECTIONAL PLATE PIPE

TONCAN* IRON ENAMELING STOCK (for service stations)

* Reg. U. S. Pat. Off.

Corporation

OHIO AND HOUSTON, TEXAS

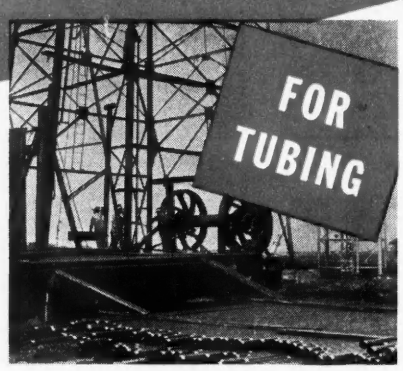
UNION DRAWN STEEL DIVISION
BERGER MANUFACTURING DIVISION
NILES STEEL PRODUCTS DIVISION
TRUSCON STEEL COMPANY
STEEL AND TUBES, INC.

SIMPLE ARITHMETIC SHOWS...

Corrosion costs you MORE than Wrought Iron!

2.18
107 | 234.00
214
200
107
030

Use BYERS WROUGHT IRON



The accurately-kept records of the Oil Industry reveal the huge cost of corrosion. Your own records show the share you pay, and equally accurate records of wrought iron users suggest how these costs can be cut by using wrought iron.

One user whose tubing life was averaging 107 days now gets 234 days service from wrought iron. Another reduced his percentage of replacement 50%. Savings for another amounted to 12% on the selling cost of the oil. An extensive test by a large operator showed that wrought iron tubing consistently gave between two and three times the service of the replaced material.

The longer life and greater economy of Byers Wrought Iron Tubing in corrosive services is of added importance today, when the hope of profit rests mainly on the control of costs. If you would like to review facts and figures, and determine whether you, too, can save through the use of this time-tried material, just get in touch with our nearest oil country representative . . . or write our Engineering Service Department in Pittsburgh. An illustrated bulletin, on the use of wrought iron in oil country services, will be sent on request.

A. M. Byers Co., Pittsburgh, Pa. Established 1864. Oil Country Representatives: Houston, 506 Niels Esperson Building; St. Louis, 1270 Arcade Building; Tulsa, 1112 South Troost Ave.; New Orleans, 411 Lowerline St.

BYERS GENUINE WROUGHT IRON
TUBULAR AND FLAT ROLLED PRODUCTS
SPECIFY BYERS GENUINE WROUGHT IRON PIPE FOR CORROSIVE SERVICES AND BYERS STEEL PIPE FOR YOUR OTHER REQUIREMENTS